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13-3419 PEMB O&M

PREVENTIVE MAINTENANCE MANUAL

NUCOR®
BUILDINGS GROUP

NUCOR BUILDINGS GROUP

TABLE OF CONTENTS

The Nucor Buildings Group (NBG) brands, again, thank you for your recent purchase of a pre-engineered building system. NBG is a high quality manufacturer of building systems, which have been designed in accordance with the Order Documents. Your building has been designed and manufactured to the highest quality standards to last for decades. Your building typically requires low maintenance, but if regular maintenance and care is provided, this building will service your needs to a greater degree for years to come. The best preventive maintenance that one can do is to perform scheduled annual inspections to identify and solve problems as they occur. This will help to optimize the service life of the building, keep the building aesthetically pleasing, functional, and virtually weather tight to protect your products, your facilities, and your personnel.

Standard details are tested for function. NBG is not qualified to act in the roll of the erector, General Contractor or Project Engineer of Record for the entire project. The contractor's failure to erect the building in accordance with the provided erection information shall not impose liability on NBG.

Before making any field modifications, please consult NBG. You may unknowingly void warranties and cause the structure to become unsafe. If unauthorized field modifications are made, you have also assumed all costs involved in the process of replacement or repair.

REPLACEMENT MATERIALS

Replacement materials can be obtained through your local NBG authorized Builder. In the event an authorized Builder is not available call your brand's division as listed below and ask for Customer Service. When calling NBG, have the original job number, year built, name of the project and original Builder information handy. This will help us identify and locate your specific building and aid us in supplying replacement parts.

American Buildings
El Paso, IL - 309.527.1500
Swansea, SC - 803.568.2100
Terrell, TX - 972.524.5407
Brigham City, UT - 435.919.3100

CBC Steel Buildings
Lathrop, CA - 209.983.0910

Kirby Building Systems
Portland, TN - 615.325.4165

Nucor Buildings Systems
Swansea, SC - 803.568.2100
Terrell, TX - 972.524.5407
Brigham City, UT - 435.919.3100
Waterloo, IN 260.837.7891

The purpose of this manual is to assist your efforts in maintaining and protecting your new building. It is also intended to help educate the new owner of the responsibilities of owning an engineered steel building manufactured by Nucor Buildings Group. Just as with a new home, your building will occasionally need attention to maintain current aesthetic appeal, warranty coverage, weather tightness and proper working order of accessory items. Likewise, you should not neglect the minimum routine annual maintenance of your building. Proper and timely maintenance is an integral part of the long term success of a roof system or structure in order for it to maintain it's original design integrity. Proper maintenance is also required in order to preserve the integrity of the Galvalume® protective coating and painting of the steel sheets. Performing scheduled annual inspections may be the best part of a preventive maintenance program. Doing so identifies problems and provides correction as the situations occur.

The outcome of several recent studies show that while the upfront and long-term costs of a metal roof system is significantly less than a built-up roof, there is still a certain amount of costs associated with routine maintenance. The figure quoted ranges from $0.02 to $0.05 per square foot annually. There are other maintenance costs associated with your Building. The most significant is the maintenance of the roof system.

The preventive information guide is available for your reference in order to practice routine maintenance. The information indicated in this manual reflects the minimum standards for routine maintenance and your specific building may require either additional special maintenance or more frequent routine maintenance, to which the determination is based solely on common sense by the owner. Some information within this guide is provided which outlines some Installation & Maintenance conditions that have been observed or experienced by building owners. In many cases, the nature of issues experienced by owners was not associated with the manufacturing of materials, but rather with how the materials were stored, shipped, handled, installed and/or maintained. Some information provided in this section is also related to outside product compatibility or improper design associated with materials that are not part of the metal building system scope. Some of these conditions are to be expected on a structure. This information is intended for additional information in order to help identify some common areas of concern so that they can be addressed or prevented. This information guide is not a certification or endorsement from NBG. Our mission is in no way to certify erection methods or engineering for specific project issues due to installation or damage. If that service is required, an independent, qualified consultant should be retained since the expertise of NBG does not extend to these areas. Services as aforementioned are not included in the scope of our order documents.

This manual has been designed to be as user friendly as possible. It is not intended to replace personal interaction. If you have a question on something that does not appear in this manual or on a situation that is dangerous to human life, consult your engineer of record, your Builder, or your NBG brand.

A. The perimeter walk
Take a walk around the perimeter of your building. Is there any “white rust”, dents or scratches on the panel? Is the finish itself acceptable; are there any blemishes? Are the fasteners all in place and well seated? Are the flashings in place at all locations? Are the cut ends de-burred and closed off where appropriate? Has the building been properly made weathertight? Are all of the small openings sealed against the elements, birds and rodents?

Are the downspouts in place as noted on the plans? Are they free of debris and well drained? Are there provisions for removing the water from the base of the building?

Are the doors and windows functional? Is the correct hardware in place? Are the requirements of ADA regulations met? Are the doors keyed alike? Do you have all the keys? Is the trim around the doors and windows installed inside and out?

Is the insulation protruding out from the base, base trim, or any other areas?

Have all chalk and construction markings been removed?

Are there structural parts left over? Do you know where they belong?

B. Inside your building
First walk the perimeter of the inside of the building. Note, are the columns structurally sound and are they all bolted down? Do the girts and flange braces seem to be in their appropriate places? All buildings will have some type of wind bracing. Are the rods under tension or loose? Is the building properly insulated or can you see areas which appear to be missing insulation? Check to see if light shows through at the eave, rake, or sill of the building; this is a dead give away that there are still things to be finished off.

Next inspect the rafters and interior columns, if applicable. There should be no gaps between the connection plates where the rafters meet the columns at the bolt locations. Check to ensure that the interior columns are structurally sound.

Finally, your building structural components were coated at the factory with a red or gray primer. Please note that this is for protection from the elements during shipment only and is not intended to be a finished coat. During some seasons of the year muddy foot prints on the structural steel are unavoidable. Any cleaning of the product surface is the responsibility of the Builder and should be considered "Dealer Prep". This is like the prep on a new car before you take ownership.

C. Your Roof
Walk the perimeter of the roof. Are the gutters and downspout outlets in place as noted on the plans? Are they free of debris and well drained? Are the fasteners all in place and well seated? Are the flashings in place at all locations? Has the building been properly made weathertight? Are all of the small openings sealed against the elements, birds and rodents?

Walk the endlaps. Have the endlaps (R-Panel Roof, Loc Seam, SS360, SSII or CFR) been installed per plans? Do the fasteners exhibit penetration through the mastics? Are the fasteners all in place and well seated?

Walk the ridge or high eave. Has the ridge cap or high eave been installed per plans? Do the fasteners exhibit penetration through the mastics? Are the fasteners all in place and well seated? Is the ridge or high eave area free of debris and well drained? Are the panel closures weathertight and properly installed?

Inspect other areas. Is there ponding around curbs or in any other areas? Does the roof drain properly? Is there any "white or black rust", dents or scratches on the panels and trim? Is the finish itself acceptable? Are the fasteners throughout the entire roof in place and well seated? Do the mastics and caulks appear to be properly placed? Are there any dissimilar materials coming into contact with NBG buildings material?

As a custom manufacturer, NBG produces a wide array of structural framing systems including clear span rigid, modular rigid, tapered beam, and lean-to. All are available in standard or wide bay options. Crane support systems and mezzanines can also be included as part of the complete building package. Your building was designed to achieve the optimal design solution for your building requirements.

A. Primary Structural Steel: Main Frames

Modifications to Shape

All structural steel designed, detailed and provided is an integral part of the building system and must be off-loaded, stored, and installed per the manufacturers instruction. It is important to understand that any omissions or modifications of materials as provided by the manufacturer can compromise the design integrity of the structure. Any modification to the structural system must be reported to NBG's Quality Services Representative. For many reasons, no change can be made without the prior approval of NBG. By making field modifications without consulting NBG, you may unknowingly void warranties and cause the structure to become unsafe. You may also assume the costs and liability associated with any corrective action taken. Any party making such omissions or modifications without the consent of the manufacturer is taking design liability for the building system.

Adding Loads

Collateral loads, unless specified in the Order Documents, are assumed to be uniformly distributed. If suspended sprinkler systems, lighting, HVAC equipment, and the like, exceed 200 pounds, consult NBG. Be particularly watchful for individual structural members that appear to be loaded significantly more than others. The roof structure of your building has been designed to the specific load criteria by your Builder, Architect, Engineer of Record, or retained design professional. Any changes or modifications to your structure which add additional loads may adversely affect the buildings load capacity. Before hanging any items from the buildings framing or adding any additional loads to the roof (sprinklers, piping, roof top units, jib cranes, etc.), contact your Builder, Architect, Engineer of Record or competent licensed structural design professional. Any additional loads placed on the structure or hung from the roof which deforms the purlins or other structural components may seriously impair the structural integrity of the building and create dangerous conditions. If your Builder is not available, contact your local District Sales Manager for additional service. To locate your local Nucor representative please visit our website www.nucorbuildingsgroup.com or call your local plant for assistance.

Primer Coating

All structural members of the building system not fabricated of corrosion-resistant material or protected by a corrosion-resistant coating are painted with one coat of shop primer. All surfaces to receive shop primer are cleaned of loose rust, loose mill scale and other foreign matter by using, as a minimum, the hand tool cleaning method prior to painting. This method is outlined in the Steel Structures Painting Council specification SSPC_SP2. The Manufacturer is not normally required to power tool clean, sandblast, flame clean, or pickle. Many manufacturers do not have the ability to do so. The coat of shop primer is intended to protect the steel framing for only a short period of exposure to ordinary atmospheric conditions. The coat of shop primer does not provide the uniformity of appearance or the durability and corrosion resistance of a field-applied finish coat of paint over a shop primer. The Manufacturer is not responsible for the deterioration of the shop coat of

primer or corrosion that may result from exposure to atmospheric and environmental conditions, nor for the compatibility of the primer used to any field-applied coating. Minor abrasions to the shop coat caused by handling, loading, shipping, unloading, and erection are unavoidable. Touch-up of these minor abrasions is the responsibility of the End Customer, according to the MBMA Common Industry Practices.

Primer Touch-up

Structural Steel normally requires no maintenance except in the event of oxidation. If the structural steel is intended to be left in an un-painted state, clean the affected area and re-prime using the primer as supplied by the manufacturer to spot treat or touch-up. Additional touch-up primer is available through your local NBG authorized Builder. In the event an authorized Builder is not available, contact the Components Department of NBG for assistance.

If the structural steel is to have a topical finish coat of paint applied, clean the affected area and consult with a qualified contractor for the use of proper primers and paints to achieve the desired results. Touch up priming, topical painting of the structural steel, and compatibility of the factory applied shop coat to any field applied coating is the responsibility of the end customer or any sub contractors retained by the end owner for such work.

B. Secondary Structural Steel: Purlins & Girts

Modifications to Shape

All structural steel designed, detailed and provided is an integral part of the building system order and must be off-loaded, stored, and installed per the manufacturers instruction. It is important to understand that any omissions or modifications of materials as provided by the manufacturer can compromise the design integrity of the structure. Any modification to the structural system must be reported to NBG's Quality Services Representative. For many reasons, no change can be made without the prior approval of NBG. By making field modifications without consulting NBG, you may unknowingly void warranties and cause the structure to become unsafe. You may also assume the costs and liability associated with any corrective action taken. Any party making such omissions or modifications without the consent of the manufacturer is taking design liability for the building system.

Primer Coating

All structural members of the building system not fabricated of corrosion-resistant material or protected by a corrosion-resistant coating are painted with one coat of shop primer. All surfaces to receive shop primer are cleaned of loose rust, loose mill scale and other foreign matter by using, as a minimum, the hand tool cleaning method prior to painting. This method is outlined in the Steel Structures Painting Council specification SSPC_SP2. The Manufacturer is not normally required to power tool clean, sandblast, flame clean, or pickle. Many manufacturers do not have the ability to do so. The coat of shop primer is intended to protect the steel framing for only a short period of exposure to ordinary atmospheric conditions. The coat of shop primer does not provide the uniformity of appearance, or the durability and corrosion resistance of a field-applied finish of paint over a shop primer. The Manufacturer is not responsible for the deterioration of the shop coat of primer or corrosion that may result from exposure to atmospheric and environmental conditions, nor for the compatibility of the primer used to any field-applied coating. Minor abrasions to the shop coat caused by handling, loading, shipping, unloading, and erection are unavoidable. Touch-up of these minor abrasions is

the responsibility of the End Customer.

Primer Touch-up

Structural Steel normally requires no maintenance except in the event of oxidation. If the structural steel is intended to be left in an un-painted state, clean the affected area and re-prime using the primer as supplied by the manufacturer to spot treat or touch-up. Additional touch-up primer is available through your local NBG authorized Builder. In the event an authorized Builder is not available, contact the NBG Components Department for assistance.

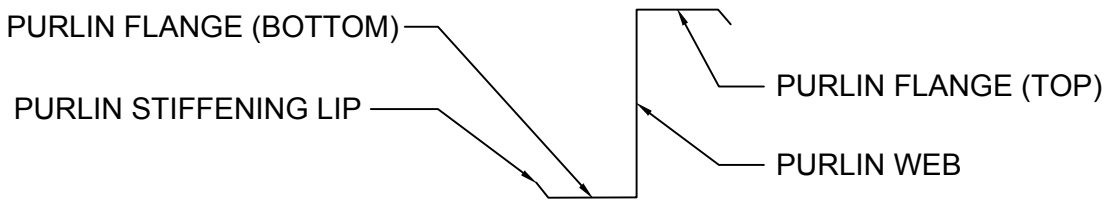
If the structural steel is to have a topical finish coat of paint applied, clean the affected area and consult with a qualified contractor for the use of proper primers and paints to achieve the desired results. Touch up priming, topical painting of the structural steel, and compatibility of the factory applied shop coat to any field applied coating is the responsibility of the end customer or any sub contractors retained by the end owner for such work.

Suspended Loads

Any load hung from the roof must be with the knowledge of NBG. The method of attachment to a roof support member varies with the type of load being suspended and supporting member. In no case should any part of a purlin (roof zee) be deformed to accommodate a suspended load. Should you need to hang a suspended load, contact your Builder, or Contractor who will coordinate with NBG. No modifications to the structure or addition of loads to the structure can be made without the knowledge of the project's engineer of record and NBG.

GENERAL RESTRICTION

UNDER NO CIRCUMSTANCES CAN THE PURLIN STIFFENING LIP
BE FIELD MODIFIED FROM THE FACTORY SUPPLIED CONDITION.
ALSO DO NOT HANG ANYTHING FROM PURLIN STIFFENING LIP.



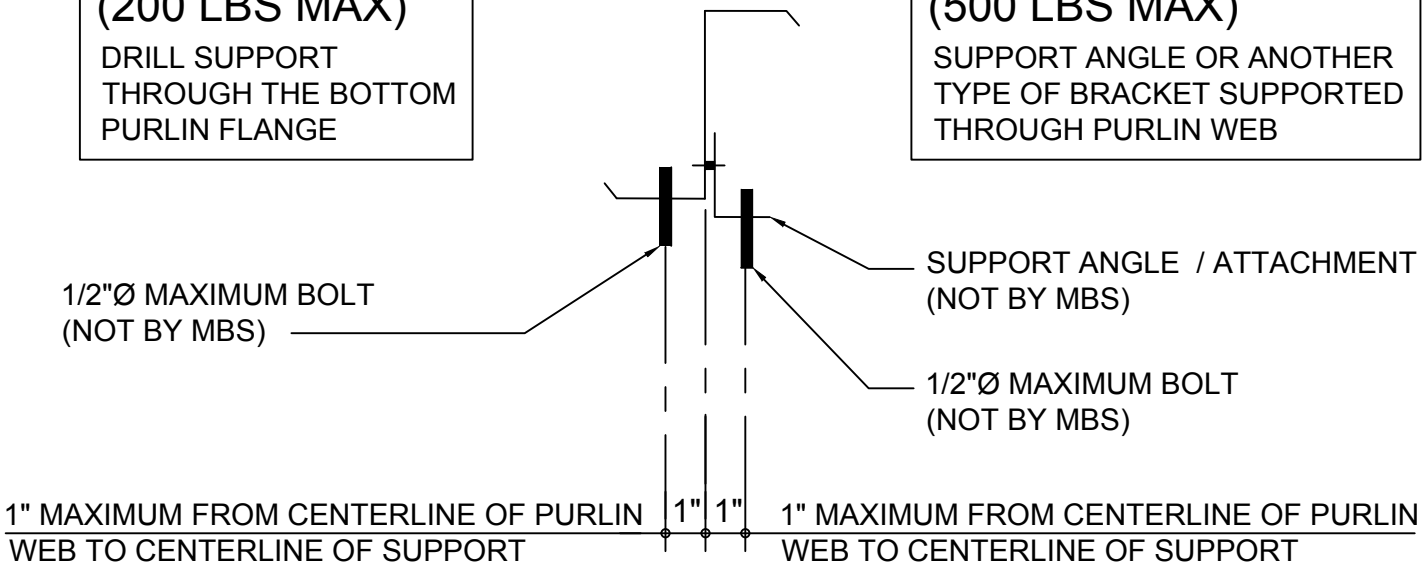
SUPPORT ATTACHMENT OPTIONS

OPTION A
(200 LBS MAX)

DRILL SUPPORT THROUGH THE BOTTOM PURLIN FLANGE

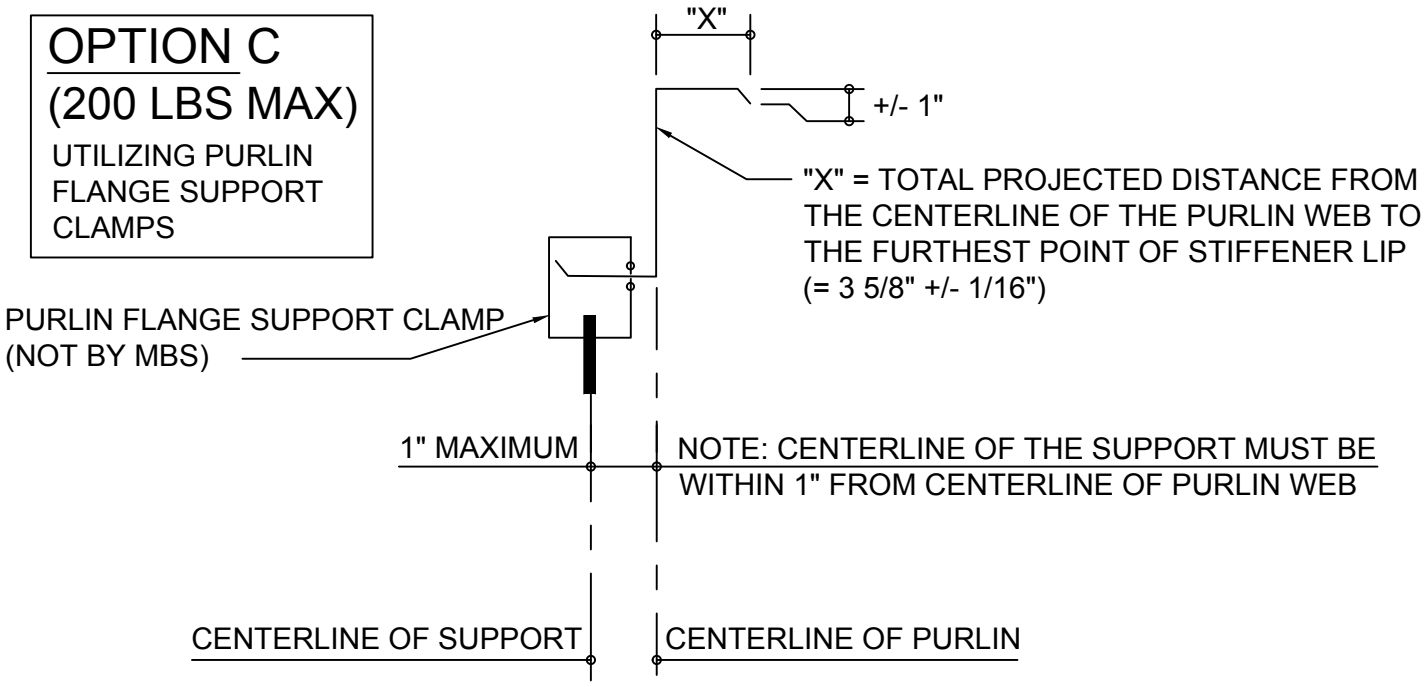
OPTION B
(500 LBS MAX)

SUPPORT ANGLE OR ANOTHER TYPE OF BRACKET SUPPORTED THROUGH PURLIN WEB



OPTION C
(200 LBS MAX)

UTILIZING PURLIN FLANGE SUPPORT CLAMPS



C. Crane Systems

Structural Bolts normally require no maintenance except in instances where the structure is exposed to vibration, such as a structure with an overhead crane. In this instance, bolts are required to be inspected at least once a year or per OSHA requirements. Crane Bracing is also required to be checked at least once a year. Crane systems require constant maintenance. Follow the guidelines outlined by your crane system manufacturer. For inspection and maintenance of cranes, refer to the applicable section of ANSI B30.11 chapter 11-2, ANSI B30.17 chapter 17-2, and CMAA Crane Operators Manual.

Crane Loads

Any building designed for crane loads was designed and provided as per the initial requests indicated on your order documents. Any change to the building from the original design must be reviewed and authorized by your Builder, Architect, Engineer of Record or competent licensed structural design professional. If your Builder is not available, contact your local District Sales Manager for additional service. To locate your local NBG representative please visit our website www.nucorbuildingsgroup.com or call your local NBG plant for assistance.

D. Wind Bracing

The bracing provided with your structure is of significant structural importance. All bracing which is in place after the erection of the building should remain in place. Never allow removal of any bracing by any contractor or maintenance personnel. If there are any questions regarding the removal or relocation of any bracing, please contact your customer service representative for assistance. To locate your local NBG representative please visit our website www.nucorbuildingsgroup.com or call your local NBG plant for assistance.

Tension

Check annually to insure that all wind bracing members (cables or rods) are under tension. Consult NBG for specific project related questions.

E. Building Evolution

Adding and Removing of Openings

Often adding a framed opening is as easy as cutting a hole in your sheeting and framing it in. At times, wind bracing must be moved or opening locations affect column flange brace placement. By making field modifications without consulting NBG, you may unknowingly cause the structure to become unsafe. Always consult NBG if you have a project-specific question.

Additions to your Building

Your NBG Builder can assist you in developing an expansion of an existing NBG building. NBG buildings can be designed with future expansion in mind.

Proper and timely maintenance is an integral part of the long term success of a roof system in order for it to remain weathertight. Proper maintenance is also required in order to preserve the integrity of the Galvalume ® protective coating or painting of the steel sheets. Maintenance of the system is a requirement and responsibility of thebuilding owner. All roof & wall panels along with trims and flashings designed, detailed and provided by the manufacturer are an integral part of the building system order and must be off-loaded, stored, and installed per the manufactures instruction. It is important to understand that any omissions or modifications of materials provided by the manufacturer, can compromise the weathertightness or protective coating integrity of the materials. Any such omissions or modifications without the consent of the manufacturer can void product warranties provided by the manufacturer.

General

Storage and installation of the wall & roofing system shall be in accordance with NBG's installation instructions. You should not store material on the surfaces of your panels, including roof areas of your building. Roof and wall panels should not come in contact with or be marked with any graphite or lead markers. Roof and wall panels should not come in contact with copper, lead flashing, exposed iron or debris. The use of treated lumber in association with painted or unpainted Galvalume ® steel sheets is a known corrosive and will cause premature deterioration of the protective panel coating. Wall panels should be kept clear of dirt & soil. Air conditioning condensation water should not be allowed to drain onto your roof or wall panels and condensate lines should always be plumbed to the eave of the structure.

Annual Routine Maintenance

Once a year, check flashing and sheeting interfaces and lap joints in the metal for proper seal and potential loose fasteners to ensure connection and weathertightness. Endlaps, eaves, ridges, curbs, translucent panels, and other interfaces should be inspected and maintained yearly. Normal adjustments or tightening of fasteners may be required. Should repair be required, please contact either the original Builder or the manufacturer for proper methods and maintenance material requirements. Panel end-lap maintenance and rebuilding instructions are available from the manufacturer. This includes the removal of fasteners and mastics, proper cleaning, and reinstallation of mastics, hardware and fasteners. It is important that this maintenance is completed according to the manufacturers recommended methods and instructions to achieve weathertightness and prevent the nullification of material warranties.

Installation & Clean-up

During installation & maintenance, the use of cutting tools that damage the painted panel finish should not be used. When field-cutting or mitering roof & wall panels or trims and flashings, non-abrasive cutting tools such as nibblers, shears, scissors or tin-snips should be used. Abrasive cutting tools such as mechanical grinders, or saws can damage the Galvalume ® or painted finish and create excess metal shavings that can corrode the panels. The use of non-approved cutting devices may void your manufacturer’s material warranty. Painted surfaces should be cleaned daily (whether during construction or maintenance work) of all filings, cuttings, screws, pencil markings, and debris to prevent damage due to oxidation of foreign materials. In addition to this, thoroughly clean all panels, trim, and gutters of all foreign material upon completion of construction & maintenance.

WARNING: Always test cleaning procedures in a small inconspicuous area before use on a large scale.

Routine Washing

(NOTICE: If located within a 1000 feet of a saltwater shoreline, roofing or siding should be washed with potable water annually.) A 5% solution of commonly used commercial detergents can be used on heavily soiled areas and will not harm your panel surface. Always rinse thoroughly with water. Do NOT use wire brushes, steel wool, sandpaper, abrasives or similar cleaning tools which will mechanically abrade the coating surface. Use a cloth, sponge or a soft bristle brush for application. For best results, cleaning should be done in the shade or on a mild cloudy day.

Walls

Cleaning

The following is the suggested maintenance for the upkeep of NBG panels:

1. Dirt may cause apparent discoloration of the paint when panels have been exposed to dirt-laden atmospheres for long periods of time. Chalking may cause some change in appearance in areas of strong sunlight. A good cleaning will often restore the appearance of these buildings and an occasional light cleaning will help maintain good appearance**.**

2. In many cases, simply washing the building with plain water using hoses or pressure sprays will be adequate. In areas where heavy dirt deposits dull the surface, a solution of water and detergent (1/3 cup laundry detergent per gallon of water for example) may be used. A soft bristle brush with a long handle may be useful. A clean water rinse should follow.

3. Mildew may occur in areas subject to high humidity, but is not normally a problem due to the high inherent mildew resistance of the baked finishes used. However, mildew can grow on dirt and spore deposits in some cases. To remove mildew along with dirt, the following solution is recommended:

   1/3 cup laundry detergent
   2/3 cup tri-sodium phosphate
   1 quart sodium hypochlorite 5% solution (chlorine-based bleach)
   1 gallon water
   Rinse with clean water immediately after use.

Rust

Once a year inspect the panels for rust. Should any rust or rust stains be found, determine the source, such as steel filings from drilling, sawing, grinding, etc. and remove them. The rust stain can generally be cleaned off with one of the following: soap and water, mineral spirits, or a mild polishing compound as used on a car finish. If you have any questions or concerns regarding rust on panel or trim surfaces, contact your local Builder. If your Builder is not available, contact your Construction Services Representative for additional service.

Paint Scratches

Scratches to the paint should be brush touched (artist brush) with touch-up paint. If the scratched area has not rusted, the paint may be applied without surface preparation. If the area is rusted, remove the rust; prime the affected area and brush with color matched touch-up paint. Some additional touch-up paint is available from your Nucor Buildings Group authorized Builder or from Nucor Buildings Group Steel Store.

Non-Water Soluble Deposits On Galvalume ® (zinc-aluminum) Finishes

Use mineral spirits (with a Neutral PH) to remove non water soluble deposits (tar, grease, oil, paint, graffiti, etc.) from the panel surface. Do not use any other harsh caustics or acidic compounds or cleaners that could potentially cause premature failure of the coating and otherwise create permanent damage to the protective panel finish.

Non Water Soluble Deposits On Silicone-Polyester & Polyvinylidene Fluoride (PVDF) paint finishes

Use a diluted mixture of the common household commercial cleanser “Tide” & Water to remove non water soluble deposits (tar, grease, oil, paint, graffiti, etc.) from the panel surface. Do not use any other harsh caustics, abrasives, or acidic compounds or cleaners that could potentially cause premature failure of the coating and/or otherwise create permanent damage to the protective panel finish. Solvents that may also be used to remove these items from paint panel finishes include:

Alcohols - Not aesthetically detrimental when properly applied
- Denatured Alcohol (Ethanol)
- Isopropyl (Rubbing) Alcohol
- Methanol (Wood Alcohol)-Note: Methanol is toxic

Petroleum Solvents - Not aesthetically detrimental when properly applied
- VM & P Naphtha
- Mineral Spirits
- Turpentine (Wood or Gum Spirits)

Aromatic and Other - Use with caution:
- Xylol (Xylene)
- Toluol (Toluene)

Limit contact time to under 5 minutes maximum and test before using, exposure long enough to damage paint finish will void your finish warranty.

DO NOT use acetone paint remover, Lacquer thinners, Esters, Ketones, Methyl Ethyl Ketone, or Methyl Isobutyl Ketone on Silicone-Polyester or Polyvinylidene Fluoride (PVDF) paint surfaces. Contact and exposure with these products can result in blemishes detrimental to the aesthetics of your metal building and will void your warranty

Most organic solvents are flammable and/or toxic and must be handled accordingly. Keep away from open flames, sparks and electric motors. Use adequate ventilation, protective clothing and goggles. A fresh water rinse should be used after application of alcohols, solvents, or aromatics to ensure that all residue is removed.

Cutting/Drilling

Field cutting and drilling of panels and trim is a normal process during the life of a metal building. The use of improper tools or cutting techniques can result in an unfavorable appearance of the finished product, and may void your warranty from the manufacturer.

Some of the most common activities that require field cutting of panels and trim are:

• Replacing damaged panels •Adding holes at pipes, etc. • Mounting external fixtures

Drilling

It is important that any and all shavings from drill bits and self-drilling screws be wiped off of the siding and roof panels. The byproducts of the drilling process are actually hot metal shavings. These shavings can imbed themselves into the finished coat of the material, resulting in rust.

Panel warranties do not cover this type of damage.

Cutting

Full width panels should always be cut with a shear or power nibblers. The hot metal shavings produced by a grinder or hot saw will burn through the panel causing the primer to evaporate into ashes. This is one of the most common reasons for rust. This rust may appear immediately or may not appear for months, and is not covered under the panel warranty. By using a shear or nibblers, this hazard can be avoided.

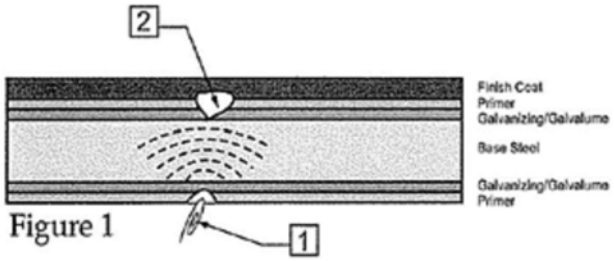


Figure 1

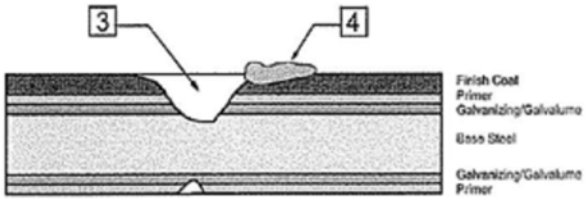


Figure 2

Figure 1 1. Hot sparks caused from cutting the panel burns through the primer.
2. The primer under the finish coat on the opposite side is also burned.

Figure 2 3. In time, the finish coat collapses causing black steel to be exposed.
4. As a result, red rust appears on the panel.

Painting

It is likely that during the life of your metal building the exterior panels will require touch-up paint. Sherwin Williams' Industrial Coatings Division can match and supply the correct primer and finish paint. Please note that all atmospheric conditions have some effect on the panel finish; give this due consideration. Consult your Order Documents or contact NBG for the correct type of paint supplied on your particular project.

Touch-up of these areas are the responsibility of the End Customer.

Roofs

General

Galvalume ® and its chemical make-up is designed to withstand minor cuts and abrasions. The unique

aluminum/zinc coating on the steel will virtually "heal" those minor abrasions that occur. That same “healing” property that protects the panel also causes the Galvalume ® coating to be highly reactive when in contact with some types of foreign debris such as copper wires, drill shavings and the like. When left on the roof, these materials can cause the panel to rust. The Galvalume ® roof must be kept free of debris in order to reach the expected service life.

The NBG "CFR", "SS360", "SSII", "Loc Seam" or "R-Panel Galvalume ® roof panels will give you years of productive life if properly installed and maintained. However, a regularly scheduled program of preventative maintenance is required in order for the roof to function. A reasonable schedule of maintenance begins with proper inspection during construction and a follow-up plan within 60 days after occupancy. Your roof should be maintained annually thereafter.

Trapezoidal Standing Seam Roof Systems
Larger “CFR”, "SS360", and "SSII" roofs are designed to "float" or move as the temperature of the roof changes. This action of floating allows the roof to expand and contract with normal temperature changes. This is a unique feature of standing seam roofs on the market today. Since the roof moves, it must not be restrained in any way. Flashings at the ends of buildings must be allowed to float in concert with the roof. Before adding additional fasteners or flashings to the building ends, be sure to contact your NBG Builder for specific instructions.

Vertical Rib Roof System
The “Loc Seam" Roof System is a vertical rib panel that is perfect for architectural requirements. This is a weathertight roof system that is ideal for hips and valleys. The panels are installed with concealed fastener clips allowing for thermal movement. It is mechanically seamed for weathertightness.

Through Fastened Roof System
Smaller projects can often utilize the "R-Panel" roof system. This roof is attached directly to the roof secondary members and does not allow the roof system movement as the previous roof systems. While the cost of the roof system and labor required to install this type of roof system is less, the need for routine maintenance is no less important.

Inspection
During erection your roof is subjected to construction traffic. This is normal and should be minimal provided the contractor uses good judgment. It is recommended that the owner take the following steps before the erector leaves the jobsite. These same steps should be followed on your annual visit.

Keep a log of your maintenance work. This will help you set a good schedule as well as document what steps were taken, and when. Periodic roof maintenance should start with a walk through the building interior to observe if modifications have been made to the primary or secondary support members. Make sure hangers for heaters or sprinklers do not extend above the structural or touch the standing seam roof. Make sure fire walls that extend to the roof do not restrict the panel movement or create ponding.

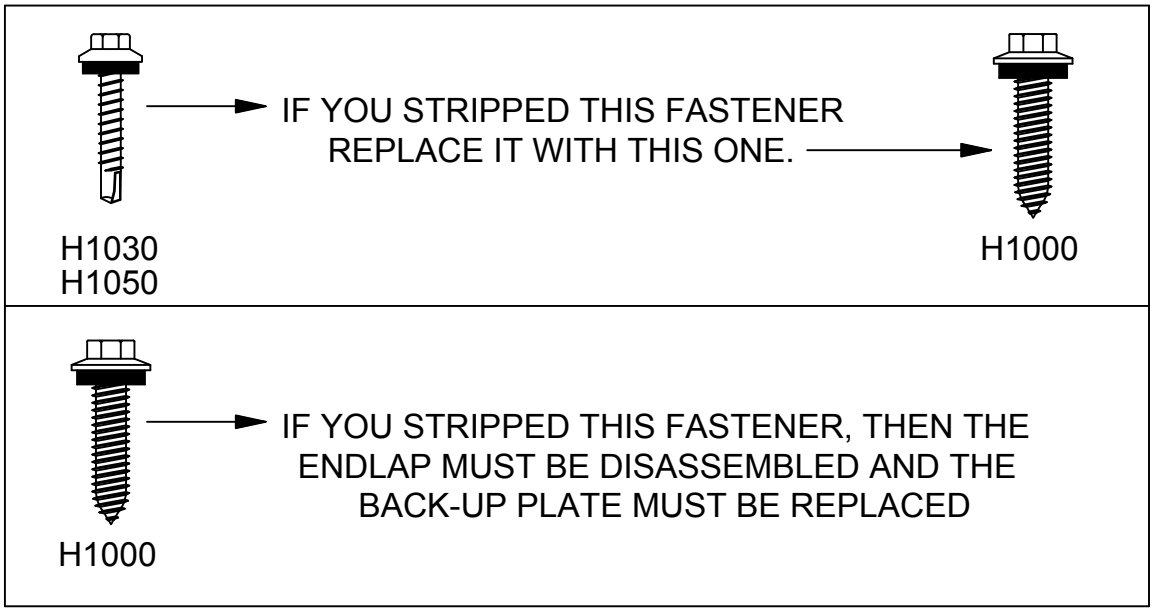
Safety First / The Building Exterior
Walk the exterior edge of the building at ground level and repair any downspouts that have clogged or been dislodged in any way. Once on the roof, make sure you are aware of any potential safety issues such as steam or hot water vents, electrical lines, translucent panels and the like, and take the necessary precautions to prevent an accident. Be sure to follow all state and local safety requirements as well as rules of good common sense. Beware of the potential for nests of wasps or bees on the roof.

Walking the Eaves
Walk the eaves of the building, using approved safety methods and take care not to get too close to the edges. Make sure all gutters and downspouts are clean and free of debris. Look for any irregularities, including missing fasteners and stripped or broken fasteners.

Any fastener that was not seated properly will work itself out eventually. Replace any unseated or loose fastener with the next larger fastener size.

STRIP A FASTENER?

FASTENER REPLACEMENT GUIDANCE



Fasteners

The fasteners provided with your structure are important to the long term success of your panel finishes and the design integrity of the system. Do not locally obtain or substitute fasteners on a project, unless otherwise authorized by the manufacturer. Replacement fasteners can be obtained through your local NBG authorized Builder. If your Builder is not available, please contact our Components Representative for assistance.

"CFR", "SS360", "SSII" and "Loc Seam" Panel Endlaps

The panel endlaps should be checked for any unseated fasteners or back-up plates that may not be properly engaged. An endlap in which the back-up plate is properly engaged will feel firm underfoot.

Should you find an improperly installed back up plate on your roof, remove the fasteners and gently pry the endlap apart and clean any mastic from the panels. Affix the back up plate in the proper position with the back-up plate tabs, re-install mastic and apply gun grade caulk between the two panels. Make sure the caulk covers the endlap completely, especially in the areas around the fastener holes. Replace fasteners using the next larger size or the "goof"screw as supplied by NBG.

"R-Panel" Endlaps

The endlaps on the R-Panel Roof are located over a purlin and are connected with screws – Check for any screws that are stripped or washers that are not seated along the endlap, ridge, rakes and eaves. Stripped screws must be replaced with an oversized fastener.

Ridge Areas

Walk the area adjacent to the ridge, being careful not to step directly on the cap. The ridge should be free of pending water and debris. Check for and remove any debris in the area. Check for any fastener that may not have been seated well. Review interface between the ridge and the rake flash or any parapet condition. Inspect the rake flash and check for any area where the flash is not seated to the panel.

Single Slope Buildings

Don't forget to walk the high side of a single slope building. Check for tightness of flashings and fasteners. Verify that the seal between the flashing and the panel closure is in place.

Expansion Joints

Larger buildings have longitudinal and transverse expansion joints. During your walk through, make sure to look for any irregularity in a flashing joint or for any loose fasteners.

Parapet Conditions

Be sure to check parapet (high/low) conditions or areas where blowing rain and snow severely test the design and installation of your building. Flashings must be allowed to "float" on standing seam roofs, yet prevent moisture from entering the building. When maintaining the roof, be sure to look for any loose fasteners or mastics. Remove any debris from parapet areas. Be careful of the addition of any fastener that will restrict movement of the roof. A restrained roof may cause maintenance problems in a system-related area. Consult your NBG builder and the Erection Drawings for specifics.

Roof Curbs and Hatches

Look around all roof hatches and curbs for debris left by erectors or repair men. All debris must be removed from the roof. Check for seated fasteners and ponding water. Water must flow freely around all curbs. Never use tar or apply topical mastics to the surface of the panels. Topically applied sealants will only conceal the cause of a problem. You may want to consider some type of permanent work platform around those units that

require constant maintenance to avoid excessive foot traffic on the panels that could lead to ponding water. Condensate lines from air conditioner units expel water contaminated with lead or copper. This must not be allowed to come in contact with the roof panel. The copper and lead are very reactive with the steel panels and can cause rust. This water must be piped off the roof to the building exterior.

Corrosive Materials

Graphite, lead, copper, treated lumber, lead flashing, exposed iron, salt, chlorine, ammonia & miscellaneous debris including dirts & oils are all commonly known corrosives to the protective Galvalume® coating and can cause premature deterioration of panel finishes. These materials specifically, but not limited to other contaminants, can be severely detrimental to the integrity of the coatings provided. Failure to keep building contaminants from contact with your panel surfaces can void panel warranties.

Dissimilar Materials

Iron pipes for gas lines, structural steel framing for roof units, and similar installations must be painted to prevent rusting. Water run-off from rusted iron or steel will diminish the life of the panel and should be piped off of the roof. Lead or copper can not be used on the roof for any reason. Never use a pencil to mark information on the roof. The graphite used in pencil leads is not compatible with Galvalume® and will quickly destroy the protective coating.

Debris

At least once a year, clean the roof & gutters of leaves or other debris which can trap or pond water on the roof. Wash dirt & debris from the panel surface. Local conditions govern the frequency of necessary routine maintenance. It is the responsibility of the owner to keep the roof free and clean of debris and corrosive materials at all times.

Penetrations

Penetrations are pipes, curbs, and other items that penetrate a metal roof panel. Penetrations must be flashed properly to assure a weathertight roof assembly. When inspecting the roof, you should see that pipe flashings have a weathertight seal at the panel surface. Ensure that the penetrations are secure and not prone to movement. Penetrations should not impede the flow of water. Curbs should be properly flashed, especially at the corners; skylight domes or panels should be checked for deterioration. As with any inspection, you should check for missing or loose fasteners, as well as possible corrosion of the metal panels.

Pipes, Supports, & Condensate Lines

Pipes, conduits, and supports for roof-supported units shall be of a non-corrosive or rust free material. Field painting of pipes and supports may be required to resist corrosion. Condensation from roof-top units shall be piped to interior or exterior locations. Damage due to condensate water is not covered under manufacturer's warranty.

The Roof in General

Observe all panel side laps to make sure the erector properly seamed each side lap. Also review the panel surface for pitted, worn, stained or rusted areas. If there are areas of concern found on the roof panels,

contact NBG Construction Services. Remove all debris from the roof at least once a year. Make sure all workmen who enter the roof know to remove their trash and debris. This will simplify the maintenance process.

Sealants & Mastics
Sealants & Mastics (gray or white tapes) are designed to be used as gaskets. In order for them to perform properly, clamping action is established by using fasteners at predetermined locations. Proper location of fasteners and mastics will assure that seals perform as designed. See the Erection Drawings for specific locations. Mastics are effective only when applied between two pieces of metal and are not to be used topically.

Sealant Removal
Precautions should be taken to prevent sealants from getting on the painted surface, as they may be difficult to remove. Sealants should be removed promptly with a solvent such as alcohol or a naphtha type of solvent. Caution: It may be possible for solvents to extract materials from sealants that could stain the painted surface or could prove harmful to the sealants. Test a small inconspicuous area first, before wide spread use.

Butyl Caulking
Butyl Caulking is applied between panel seams or joints as directed by the Erection Drawings. Butyl caulk is a non-skinning caulk that is effective when used between pieces of metal. It is not to be used topically.

Polyurethane Caulking
Polyurethane Caulking is a skinning caulk applied between trim laps or joints as directed by the Erection Drawings. This caulk is typically used in areas that may be exposed to the elements.

Topical Coatings
The use of tar and other topical applied products should not be permitted or utilized as a method of leak repair. The use of topical coatings will void panel warranties and is detrimental to the performance of the materials. The use of any topical coating or other topical applied product is prohibited, unless specified by the manufacturer.

Ice & Snow Buildup

You should be familiar with the roof load specified for your building regarding snow & live loads. Any significant accumulation of snow and ice may threaten the structural integrity of your roof if it approaches or exceeds the design roof capacity. In the event of severe winter storms, the accumulation of snow and ice should be carefully monitored and frequent inspections made to detect any deflection of the roof system, damming or clogging of gutter systems, ponding or unusual drifting conditions.
Excessive ice & snow should be removed from roof areas. Please refer to our Snow Removal Guidelines for additional information specific to the proper removal of snow & ice. The removal of snow & ice should be performed by experienced personnel according to the Snow Removal Guidelines provided, in order to avoid damage to the roof or the structure. Appropriate precautions should be taken to minimize the risk of injury on the roof during hazardous conditions. Excessive ice & snow removal is particularly important in gutter areas (eaves & valleys) and in areas of the roof sheltered from wind (behind facades, stepped roof conditions, etc.).

If any evidence of structural distress is noticed, contact the building manufacturer, your Builder, or consult with a competent licensed structural engineer or professional for assistance in avoiding damage or catastrophic failure of the roof system.

Foot Traffic

Roof traffic is a leading cause of roof leaks. If routine traffic is unavoidable, have your builder install a walkway designed for use with your roof panel. When walking on the roof is required:

- Avoid stepping on the ridge caps.
- Avoid stepping on lap joints in roof panels and flashings.
- Avoid walking near roof curbs or other roof penetrations.
- Avoid stepping on panel ribs between purlins.
- Do NOT step in or on gutters or the gutter hanger system.
- Do NOT step on or near translucent panel skylights. **!!! CAUTION !!!** If skylights are present in your roof, extreme care should be exercised when working in those areas. **NEVER STEP DIRECTLY ON A SKYLIGHT, OR IN THE SURROUNDING AREA ADJACENT TO A SKYLIGHT.** Skylights may not support the weight of a worker, and bodily harm could result from a fall. Please follow all OSHA and/or other state and local safety guidelines applicable for the particular jurisdiction.

Gutter and Downspouts

Clear all debris (leaves, dirt, etc.) from gutters and downspouts as required periodically and kept free-flowing at all times. The frequency required is dependent on the building's surroundings.

Foliage

While bushes and trees enhance the appearance of any building, their contact with the panel systems can produce scratches in the paint surface which can eventually cause problems. Keep bushes and trees trimmed back from the panel surfaces.

Damaged Trim

Trims located around openings (corner trims, base trims, jamb trims, etc.) can sometimes get damaged by vehicle traffic and can lead to weathertightness issues. Replacement trim can be obtained through your local NBG authorized Builder. If your Builder is not available, contact your local NBG Components Representative for additional service. To locate your local representative please visit our website www.nucorbuildingsgroup.com or call your local NBG plant for assistance.

Accessories

General

Windows, doors, vents, and louvers should be checked yearly for loose fasteners and any moving parts should be lubricated as necessary.

Gravity Vents / Roof Vents

Gravity roof vents are designed to allow inside air to be vented to the outside. The throat and dampers also can allow blowing rain and snow to enter the inside of the building. Inspect vents annually for debris, bird intrusions, etc. Inspect pull chains and lubricate mechanisms as required. Hard to operate roof vents are usually the result of pulleys and damper rods in need of lubrication or the chains and cords not being on track. Check operating hardware and lubricate as needed.

Roof Curbs

Heavy vibration from a mechanical unit can cause water leakage around a roof curb. Should this occur, check the sealant and fasteners around the curb. Any loose fasteners should be tightened or replaced with the next larger size. Any sealant or mastic that has deteriorated should be removed and replaced with new. If possible, isolate the unit from the curb to minimize vibration to the curb. Look around all roof hatches and curbs. Debris from the mechanical repairmen must be removed from the roof. Check for seated fasteners and ponding water. Water must flow freely around all curbs. Never use tar or topically applied mastics on the surface of the panels. Topically applied sealants will only conceal the cause of a problem. You may want to consider some type of permanent work platform around those units that require constant maintenance. Condensate lines from air conditioner units expel water contaminated with lead or copper. This must not be allowed to come in contact with the roof panel. These must be piped to the building exterior. Iron pipes for gas lines and the like, structural steel framing for roof units, etc. must be painted to prevent rusting. Water run-off from rusted iron or steel will diminish the life of the panel. Lead or copper can not be used on the roof for any reason.

Pipe flashings & Pipe Boots

Inspect pipe flashings & pipe boots annually. Water should not be allowed to pond on the pipe flashings or pipe boots. Remove any algae growth found on the pipe flashing or pipe boot.

Louvers

The operating hardware within a louver occasionally needs to be cleaned and a new light coat of oil or grease applied. This will improve the ease of operation.

Translucent panels

Do not step or stand on the panel itself at any time. Inspect translucent panels annually for loose fasteners, missing or damaged mastic and caulking, etc.. Deterioration of the caulking may contribute to the long term integrity of the systems which could eventually cause leakage. If any mastic or caulking is found damaged or missing, remove old material and replace with new mastic or caulking, designed for that application. Translucent panels may be cleaned with a mild nonabrasive cleanser. Avoid using any cleanser that may cause hazing. Do not remove warning stickers. Never paint over a translucent panel.

Doors

Overhead Doors

Periodically check the attachment bolts around an overhead door and tighten as required. Call the door manufacturer or consult the door supplier should the door get out of alignment or the mechanical parts within the door become hard to operate.

Sliding Door

Periodically clean the sliding door tracks and lubricate the rollers to help assure ease of use. Call the door manufacturer or consult the door supplier should the door get out of alignment or the mechanical parts within the door become hard to operate.

Walk Doors

The following is intended to serve as a general guideline for maintenance activities required for hollow metal doors and frames. Maintenance will be for the most part associated with the accessories and hardware attached to the door and frame. Maintenance of any product is important and necessary to obtain the maximum benefits of product service and longevity. Hollow metal doors and frame assemblies are no exception. In fact, in some cases where the door and frame assembly are used as a "fire rated" fire barrier or a "leakage rated" smoke and draft barrier, proper maintenance is crucial. Basic maintenance is imperative and well worth the effort to provide for life safety.

Areas of inspection

The following items should be periodically checked. Since doors in different areas of a building experience different levels of traffic, the frequency of periodic inspections would occur with consideration of this.

Hinges

Check all hinges for loose screws, hinge pin wear, or other notable defects. Service the hinges or remove the defective parts and replace if necessary per the manufacturer's recommendation. The door should always swing freely and smoothly from open to latched (when latching device is used) position without obstruction.

Locksets, Panic Devices, Fire Exit Hardware

Check all locksets for loose screws, linkage arm wear, fluid leakage, hinge pin wear, or other notable defects. Service the lockset or remove defective parts and replace per the manufacturer's recommendation. The door should always latch freely and smoothly without obstruction. Self-latching should always function freely and smoothly as the door swings into the closed position. Additional force should not be needed to achieve latching. Worn or defective hardware should be repaired or replaced by a qualified technician.

Strike Plate

The strike plate should be adjusted to seat the door leaf firmly against the jamb. The plate should also be firmly attached to the frame or inactive leaf of a pair of doors. Check for loose screws and/or other notable defects. Service or remove strike plate if necessary.

Weather Stripping
Weather stripping should be adjusted to prevent air from leaking excessively around the door. Weather stripping should be cleaned periodically to assure a proper seal. Worn or damaged weather stripping should be replaced as required.

Closing Devices
Check all closing devices for loose screws, linkage arm and pin wear, fluid leakage, or other notable defects. Service the device or remove defective parts and replace as needed. The primary and secondary closing speed adjustments should also be set and maintained in accordance with the manufacturer's recommendations. The device should allow the door to operate freely and smoothly throughout its entire swing and positively latch (if so equipped) or remain in the closed position**.**

Surface Bolts/Flush bolts
Check all surface bolts or flush bolts for loose screws, rod bolt adjustment, and strike plate (on both door and frame if so equipped) attachment. Service the device or remove defective parts and replace as needed. The rod bolts should retract, extend, and engage the strike or keeper hole freely and smoothly for both manually and/or automatic flush bolts.

Glass Lites
The glazing material should be checked for cracks and/or missing pieces of glazing. The glazing mounting frame should be checked to assure screws (if used) are tight and the unit is securely attached to the door. Service the glass lite or remove defective parts and replace as needed. Also be sure to use approved safety glass in appropriate applications/ locations, or fire rated glass and glazing in fire doors, windows or lites.

Door and Frame Finish
A general visual inspection of the door and frame finish is appropriate. Any excessive finish defects should be repaired and repainted. Adequate protection is needed to prevent the product from rusting and shortening its service life.

Door and Frame Finish
A general visual inspection of the door and frame finish is appropriate. Any excessive finish defects should be repaired and repainted. Adequate protection is needed to prevent the product from rusting and shortening its service life.

Windows

The following is intended to serve as a general guide line of maintenance activities required for aluminum windows and frames. Maintenance will be for the most part associated with the accessories and hardware attached to the window and frame. Maintenance of any product is important and necessary to obtain the maximum benefits of product service and longevity. Aluminum windows and frame assemblies are no exception. Basic maintenance to ensure the proper functioning of the assembly is imperative and well worth the effort to provide for life safety.

Caulking in windows will deteriorate in time, usually resulting in window leakage. If this happens remove the old caulk and apply new caulk in its place. Windows that become hard to slide should have the track area thoroughly cleaned and a light coat of lubricant applied to the tracks.

Areas of inspection
The following items should be periodically checked. Since windows in different areas of a building experience different frequency of use, periodic inspections would occur with this in mind.

Hinges
Check all hinges for loose screws, hinge pin wear, or other notable defects. Service the hinges or remove the defective parts and replace if necessary per the manufacturer's recommendation. The window should always move freely and smoothly without obstruction from open to latched (when latching device is used) positions.

Locksets, Fire Exit Hardware
Check all locksets for loose screws, hinge pin wear, or other notable defects. Service the lockset or remove defective parts and replace per the manufacturer's recommendation. The window should always latch freely and smoothly, without obstruction.

Glass Lites
The glazing material should be checked for cracks and/or missing pieces of glazing. The glazing mounting frame should be checked to assure attaching screws (if used) are tight and the unit is securely attached to the window.
Service the glass lite or remove defective parts and replace as needed. Also be sure to use approved safety glass in appropriate applications / locations.

Window and Frame Finish
A general visual inspection of the window and frame finish is appropriate. Any excessive finish defects should be repaired.

This publication has been prepared to assist the owner in understanding and dealing with condensation. Its contents are based on information believed to be reliable. However, the prevention and elimination of condensation depend on the total design and construction of the building, which is beyond the responsibility of NBG. Accordingly, information herein should not be regarded as a recommendation concerning metal building design and construction.
Construction is fast paced. In our business, we provide sheltered space. Without careful thought to the mechanical systems, the insulation system, and our methods of construction, the presence of condensation becomes a possibility. The effects of condensation can be devastating.

Dew Point
The air we breathe is filled with many gases including water vapor. The amount of water the air can hold is proportional to the temperature. "Dew point" is described as the temperature at which air can no longer hold water vapor. That is the temperature when condensation occurs. Condensation will occur on any surface that is at or below the dew point temperature.

During Construction
Huge amounts of moisture can be introduced into the air during the construction stage. Excavated earth can introduce large amounts of water to the air. Often, the contractor will fully erect the framing, roof, walls, and insulation so it becomes easier to pour concrete inside. Heat may also be added to keep the concrete warm. Under these circumstances, the interior of the building is literally flooded with moisture. As the air becomes saturated, condensation may occur on the steel, the insulation, or any other surface. The result is often disastrous.

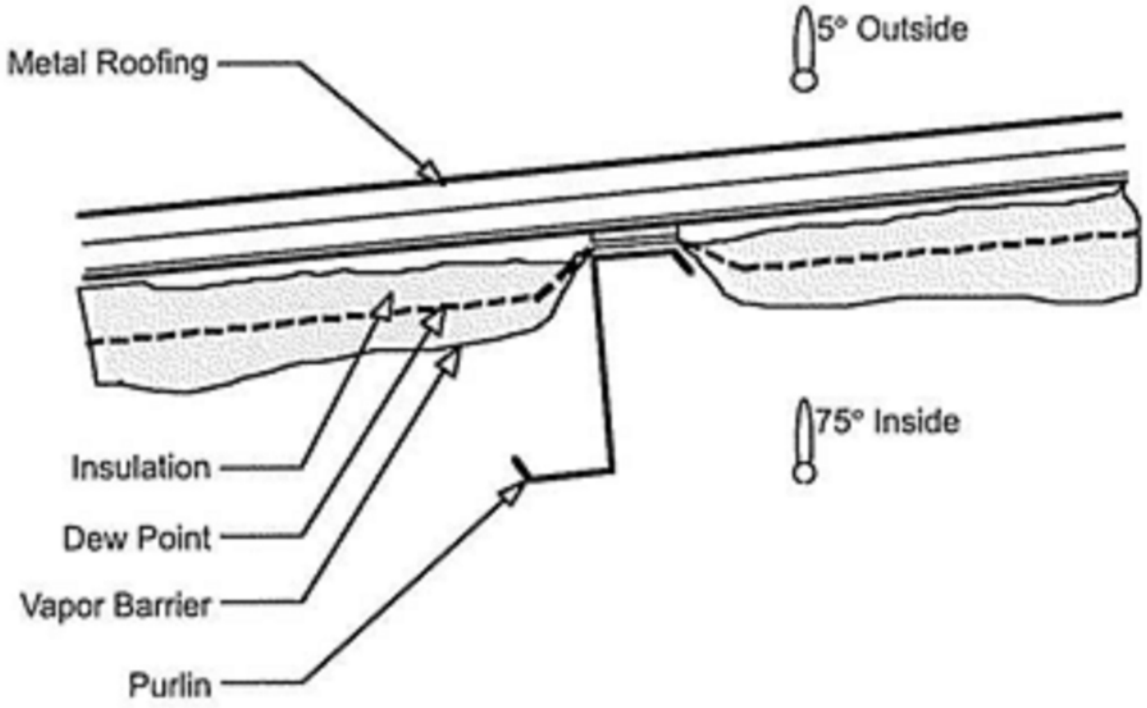
What Can Happen?
If condensation collects on the interior of the building, rust literally covers the frames and purlins. Sometimes the insulation becomes saturated, convincing the owner that the roof is defective. In colder conditions, ice forms on any surface where moist air comes in contact with a thermal break. Ice may form on purlins, door knobs, window cranks, or even the seams in the insulation. To prevent this, the moisture in the building must be removed with the use of fans or other means. By replacing moist, inside air with less humid outside air, the conditions inside become more balanced and condensation can be prevented.

The Construction Stage
During construction, proper planning is essential for the control of condensation. Ventilation of the slab and foundation work is critical. Proper installation and design of the vapor retarder is also important. Remember, ample consideration to each area of construction is important to the success of the project.

Proper Design and Planning
Careful planning with regards to mechanical systems, methods of construction, insulation systems, and end use will insure that the owner's expectations are met.

Roof Section
The warm, moist air inside a building must be kept at a relative humidity level below the dew point. A vapor

retarder alone cannot prevent condensation. The insulation design of the building, along with the construction techniques and the design of the air handling systems, work together to prevent damage due to condensation. At some point in the range between indoor temperature and outdoor temperature the dew point is reached. The vapor retarder helps prevent warm, moist, inside air from condensing on the insulation.



Inspect the exterior of your building for exposed insulation and call your contractor immediately if found. Exposed insulation will wick and hold water against the ends and back side of the panels, causing rust to occur.

Insulation Facings

Insulation facings should be monitored continuously and a thorough inspection made once a year. Any holes or tears in the facing should be repaired with patch tape as supplied by the insulation supplier. Remember, even a perfectly installed retarder is not a perfect vapor retarder.

Condensation
If your building is experiencing excessive condensation, consult your HVAC contractor to assure that humidity levels and air movement are as projected. Also, have your building contractor check to make sure there are no obvious openings in the insulation splices. The unfaced surface of your insulation should always be in full contact with the exterior steel sheets.

Loose Insulation
Insulation tearing loose at various locations within the building (particularly at the eave or base) might not be the result of poor insulation, but rather a strong negative pressure inside the building resulting from improperly balanced HVAC system or an extra exhaust fan added after the erection of the structure. This, combined with a strong wind outside the building will often result in the insulation coming loose in these areas. The unfaced surface of your insulation should always be in full contact with the exterior steel sheets.

Roof Leaks
Should you observe evidence of a roof leak, such as water on the floor, stained ceiling tiles or a bubble in the insulation vapor retarder, contact your building contractor immediately. After the leak has been repaired, have your contractor cut the vapor retarder where the water has collected to allow the wet insulation to drain. Once the insulation has thoroughly dried, repair the vapor retarder with patch tape available from the insulation supplier. Ensure that the insulation is in full contact with the steel sheet. There are various reasons a roof leak might occur, such as:

- Improper Installation
- A lack of routine maintenance
- Damage to a component
- Deterioration of a component
- Insulation air space void that creates condensation

It is also possible that a leak might not be the result of the above referenced conditions, but rather the result of a strong negative pressure inside the building from an improperly balanced HVAC system. If you have any questions or concerns regarding specific roof leaks on your building, contact your local Builder. If your Builder is not available, contact your NBG Construction Services Representative for additional service. To locate your local representative please visit our website www.nucorbuildingsgroup.com or call your local NBG plant for assistance.

Negative Pressure
Negative air pressure is force that can compromise sealants and affect the weathertightness of a building system. If sealants become compromised then it is entirely possible for a leak to develop over time. If a leak is left unaddressed, it can lead to potential water-infiltration into the insulation cavity. Over time this can create a wide range of issues from annoying leaks, to mold & mildew, to sagging insulation, and to potential premature corrosion of the panels, trims and structural's in the affected area. The phenomenon of negative air pressure is basically a condition of unbalanced air pressure between the inside air pressure and outside air pressure of the structure. When a condition exists with too much outgoing or exhausting air combined with a lack of

incoming air, then a vacuum is created. When the vacuum is created, it naturally wants to pull outside air into the structure. When the pressures are high enough, they also begin to pull any potential standing water into the structure as well. In order to restore the balance and equalize the pressure, additional incoming air supply is required. This is typically accomplished with the addition of Make Up Air units added to the structure. Proper measuring and evaluation of needed Make Up Air supply requirements is typically provided by a qualified mechanical engineer or contractor. Negative pressure can be a concern and primary source for water-penetrations. The building owner should have a qualified mechanical engineer or contractor retained for proper testing of existing conditions to address the negative pressure. If negative pressure is evident on a project, then it needs to be addressed in full before attempting to address any additional pursuant leaks.

Snow Removal

Roof snow accumulations in excess of specified project design loading criteria can cause significant distress to your building structural system. Snow will build up in areas around firewalls, parapet walls, valleys, dormers, and on lower roof levels where a roof step occurs. Since the density of snow varies depending on weather conditions during and after a snow fall, it is not possible to determine a single value for the allowable height of snow that a building can safely support.

The underlying snow density increases due to melting from the building heat loss and as water is absorbed from the melting snow above. As weather and temperature changes continue, ice may build up under the snow layers, further increasing the building roof loading intensity. This ice build up also causes additional water back-up on the roof deck. The most severe condition occurs when rain falls on a roof system already loaded by snow. In this case, the snow absorbs the rain water, and loads can approach the weight of water (62.4 pounds per cubic foot, or 5.2 pounds per inch of depth). This condition must be monitored with extreme caution.

The following procedure may be used as a guideline for responding to roof overload conditions due to extreme snow and ice build up conditions:

1. Visually inspect the roof system to identify unusual deflections of frames, purlins, or joists. Starting in this area, remove approximately one-half of the snow depth in a pattern that does not cause an unbalanced loading condition on the frames or purlins.
2. In general, the shoveling pattern should progress from each endwall of the building towards the center. On larger roof areas, additional people working from the center of the building to the ends is recommended.
3. Along the building width, remove snow from the eave towards the ridge, sliding the snow off the roof over the gutter. On gabled buildings, remove the snow on both sides of the ridge at the same time.
4. Remove the remaining half of the snow depth in the same manner as described above.
5. Never use metal shovels or “scrape” the roof down to the surface of the panel. Remember, the objective is to relieve the excess loading condition due to the weight of the snow, not to completely clear the roof panel of all snow and ice. Attempting to scrape the roof will result in broken fasteners creating roof leaks.
6. Keep gutters, downspouts and roof drains open and free flowing to prevent water back up and ice build up on the roof system. Ice damming conditions are especially likely on the north side of a building and in shaded areas. Installing heat tape in gutters and downspouts can also be used as a precaution, however, heat tapes may not be 100% effective in extremely low temperatures and should be checked regularly.
7. Watch for extreme deflections and listen for unusual noises when snow and ice build up conditions exist.

Safety Guidelines

1. Always provide proper safety precautions when working on the roof.
2. Pay special attention to and be aware of Translucent Roof Panel locations. These panels are not intended to support roof foot traffic loads.
3. Be cautious of snow or ice breaking away and sliding down the roof, even on low slope buildings. Metal roof systems are extremely slippery when wet. It may be necessary to locate ladders at the end

of the building to avoid sliding snow.

4. Use extreme care when working along the edge of the roof.
5. Never send one person alone on a roof to remove snow. NBG does not make any recommendation on when to remove snow from roofs. It is up to the individual property owner to consider the benefits and dangers of snow removal and decide their own course of action. Remember to consider the depth and relative moisture content of your snow and the capacity of your roof structure in making your decision to remove snow or not.

For additional information , it is also recommended to review the “Snow Removal” section of the Metal Building Systems Manual, current version.
Additional suggested information regarding maintenance is also in sections titled ‘Gutter & Downspout Maintenance’ & ‘Ice Damming’.

The best preventative maintenance that one can do is to perform scheduled annual inspections to identify and solve problems as they occur. This will help to optimize the service life of the building, keep the building aesthetically pleasing, functional, and virtually weather tight to protect your products, your facilities, and your personnel. This inspection will require a critical examination of both the interior and exterior components of existing assemblies, cladding, doors, windows, cranes, and flashings. Keeping a log of your maintenance work will help you maintain a good schedule as well as document what steps were taken, and when. Any preventive or corrective maintenance procedures should be designed to keep the building in a virtually weatherproof condition. Any modifications found to the structural systems during your inspection must be reported to NBG's Quality Services Representative. By making field modifications before consulting NBG you may unknowingly void warranties and cause the structure to become unsafe. You have also assumed all costs involved in the process.

If a manufacturer's or contractor's warranty is obtained for a roof assembly, one of the most important things a building owner can do is read and understand the terms and conditions of all warranties. The manufacturer's or contractor's warranty is a legal contract, and the warranty, for a variety of reasons, can be voided like any other contract. These reasons may include but are not limited to the following:

- Neglect by not performing inspections, repairs and routine maintenance in a timely manner.
- Failure by a building owner to notify the warrantor of leaks in the roof assembly.
- Failure by an owner to notify the warrantor before installing new rooftop equipment and penetrations or making any other modifications to the building system.
- Failure to have permanent repairs or maintenance performed in accordance with the warranty or instructions, such as:
    - Using material not manufactured or approved by the warrantor or using an incompatible material for a repair.
    - Work performed by a contractor not approved or authorized by the roof assembly manufacturer or warrantor.
    - A change in the use of the building unless approved by the warrantor.
    - A change in ownership of the building; many warranties are nontransferable.

Building owners should maintain historical records of these inspections. A historical record should also be kept to provide the owner with data concerning the original erection of the building, whom the erector was, the contractor, building manufacturer, warranty information, any special conditions, or any known contaminants that may be discharged onto the building surfaces. An owner should also use the historical record to document all subsequent inspections, maintenance and repairs performed on the building.

Before the inspection takes place, please refresh your knowledge by reading through the Preventive Maintenance Manual. The manual is a good reference and will go into more detail and explanation to help you complete a thorough inspection.

As always, apply all safety precautions and requirements as mandated by state and local requirements as well as rules of good common sense while during your inspections.

Date of inspection:		**Condition Severity:**	**Action Taken:**
Inspection performed by:		**G = Good - No Action Req'd**	**Y = Yes**
Title or postion:		**F = Fair - Monitor Periodically**	**N = No**
		P = Poor - Immediate Action	
Weather Conditions:			
Temperature:			
Sun /Clouds:			

STRUCTURAL FRAMING	ITEM	G	F	P	Y	N	ACTIONS TAKEN OR RECOMMENDED
Main Frames and Rafters	Any modifications to shape						
	Any additional collateral loads						
	Check the primer						
	Loose bolts						
	Other						
Secondary Framing	Any modifications to shape						
	Any additional collateral loads						
	Check the primer						
	Loose Bolts						
	Other						
Crane System (if applicable)	Check crane operators manual						
Wind Bracing	Check tension of rods/cables						
	Any bracing removed/altered						
	Other						
Building Evolution	Any openings added/removed						
	Any bracing relocated/modified						
	Any secondary framing been altered						
	Any additions to existing building						
	Other						
General	Contaminants						
	Corroded metal						
	Other						

WALLS	ITEM	G	F	P	Y	N	ACTIONS TAKEN OR RECOMMENDED
Finish	Dirty or appear discolored						
	Seams/Joints						
	Appearance of paint						
	Loose panels						
	Worn panels						
	Damaged panels						
	Drill or other metal shavings						
	Fasteners						
	Fastener holes						
	Exposed or corroded metal						
	Adhesion						
	Cracks						
	Pinholes						
	Other						
Wall Flashings	Roof to wall flashings						
	Base flashing						
	Counter flashing						
	Other						
General	Contaminants						
	Other						

ROOF	ITEM	G	F	P	Y	N	ACTIONS TAKEN OR RECOMMENDED
Eaves	Roof drains properly						
	Scuppers						
	Gutters						
	Downspouts not damaged						
	Downspouts not blocked or clogged						
	Displaced or loose joints						
	Any ponding						
	Any debris/vegetation growth						
	Fasteners/rivets						
	Corrosion of metal						
	Sealants displaying signs of cracking						
	Elbows/miters are open						
	Loose or displaced closures						
	Other						
CFR, SSII, SS360 or Loc Seam Panel Endlaps	Fasteners						
	Engaged back-up plate						
	Other						
R-Panel Roof Panel Endlaps	Fasteners						
	Other						
Ridge	Any ponding						
	Any debris/vegetation growth						
	Fasteners						
	Loose or displaced closures						
	Damage from foot traffic						
	Other						
High Eave	Fasteners						
	Any ponding						
	Any debris/vegetation growth						
	Loose or displaced closures						
	Other						
Expansion Joints	Flashing joints						
	Fasteners						
	Any ponding						
	Any debris/vegetation growth						
	Other						

ROOF	ITEM	G	F	P	Y	N	ACTIONS TAKEN OR RECOMMENDED
Step-down or Parapet Conditions	Flashing joints						
	Fasteners						
	Any ponding						
	Any debris/vegetation growth						
	Displaced or loose joints						
	Sealants displaying signs of cracking						
	Loose or displaced closures						
	Other						
General	Seams/Joints						
	Loose panels						
	Worn panels						
	Damaged panels						
	Fasteners and washers						
	Fastener holes						
	Contaminants						
	Any active roof leaks apparent						
	Adhesion						
	Exposed or corroded metal						
	Dirty or appear discolored						
	Appearance of paint						
	Drill or other metal shavings						
	Cracks						
	Pinholes						
	Missing or displaced metal						
	Damage from expansion/contraction						
	Other						
Roof Curbs and Hatches	Any debris/vegetation growth						
	Fasteners						
	Any ponding						
	Condensation lines						
	Loose or displaced closures						
	Sealants displaying signs of cracking						
	Other						

ROOF	ITEM	G	F	P	Y	N	ACTIONS TAKEN OR RECOMMENDED
Other Roof Penetrations	Flashed properly						
	Weathertight seal						
	Secured and not prone to movement						
	Deterioration of skylites/panels						
	Sealants displaying signs of cracking						
	Does not impede the flow of water						
	Other						
Flashings	Roof to wall flashings						
	Counter flashing						
	Coping						
	Ridge Caps						
	Hip Caps						

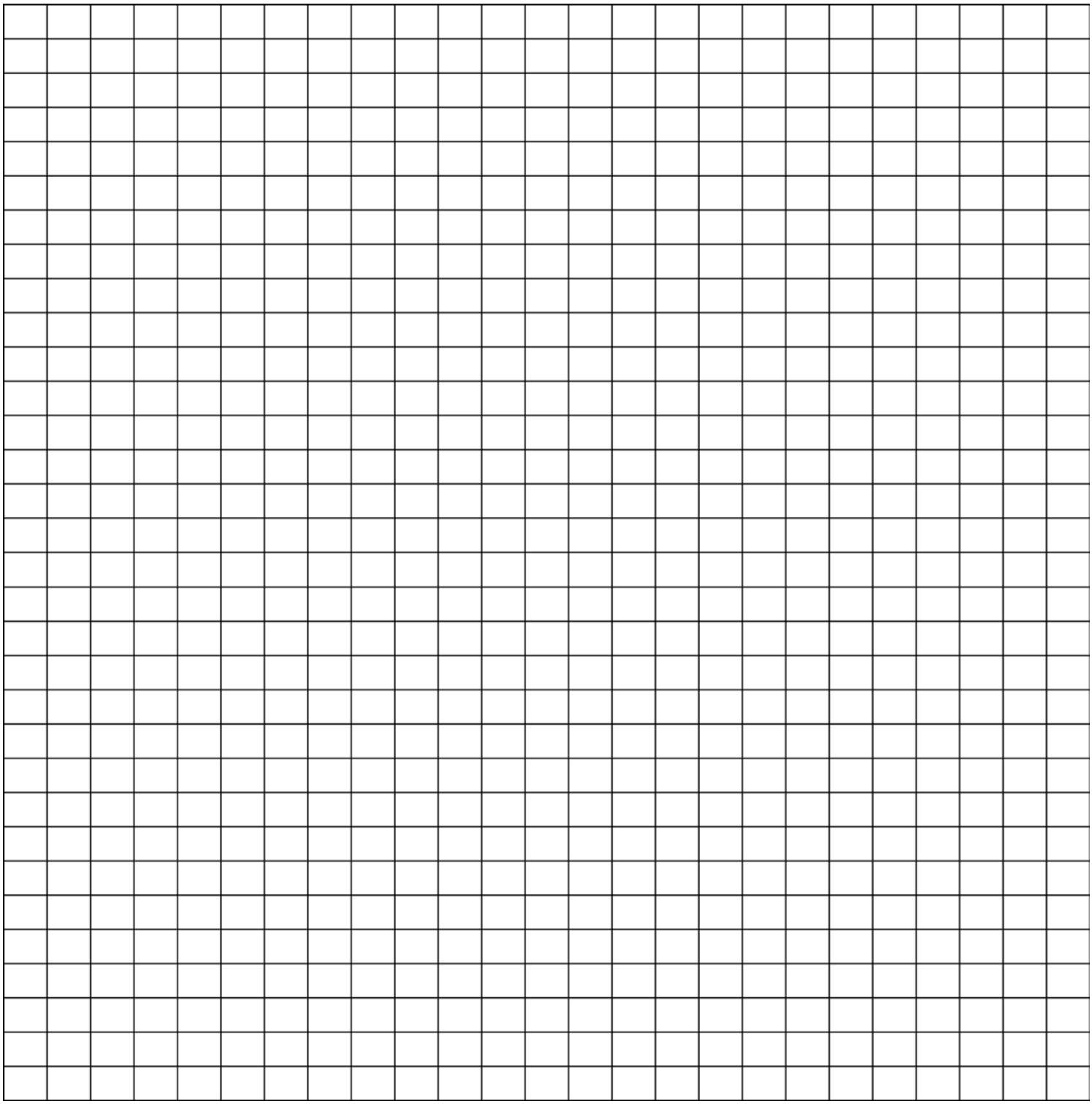
ROOF	ITEM	G	F	P	Y	N	ACTIONS TAKEN OR RECOMMENDED
HVAC/CLIMATE	Consult your supplier						
Snow and ice removal	Drainage						
	Do not pile against building						
	Do not allow salt to remain in contact with building						
Other							

General Remarks:

Do you see any chance for the roof to leak? Note areas of concern and indicated on sketch below.

Additional notes:

Roof Plan Sketch:
Sketch roof plan below and indicate areas requiring corrective measures.



GLOSSARY

Backup plates	On NBG's standing seam roof systems, the plate is seated beneath the lower panel at an endlap.
Bar Joist	A name commonly used for “open web steel joists” used as roof system supports.
Black rust	Also referred to as wet storage staining. A gray or black stain that occurs on Galvalume® material when water is introduced between tightly-stacked sheets. It is a fast developing corrosion that occurs due to the lack of an inhibiting oxide film. (see also White rust)
Builder	A party who, as a routine part of his business, buys metal building systems from a manufacturer for the purpose of resale.
CFR	Concealed fastener roof, A NBG trapezoidal standing seam system.
Chalking	Formation of a fine powder on the surface of a paint film during normal weathering. It normally results in color fading.
Collateral loads	The weight of additional permanent materials other than the building system, such as sprinklers, mechanical and electrical systems, partitions, or ceilings.
Crane	A machine designed to move material by means of a hoist.
Deflection	The displacement of a structural member or system under load.
Dektites	A commonly-used trade name referring to a rubber pipe flashing used at round roof penetrations.
Eave	The point at which a side wall meets a roof plane. See also High Eave.
Endlaps	The lap of two separate roof panels as they provide coverage down the slope of a roof. An endlap occurs when a roof width is greater than the available length of roof panels.
Erector	A party who assembles or erects a metal building system.
Expansion joint	A break or space in construction to allow for thermal expansion and contraction of the materials used in the structures.
Flange bracing	Angles attached at inner flanges of columns or rafters. Used to shorten the design unbraced length of the column or rafter, thereby making the member design more economical.

Framed opening	Framing members and flashing which surround an opening.
Girts	Cold formed secondary horizontal structural used as wall system supports.
Header	The horizontal structural member located at the top of a framed opening.
High eave	On a single slope building, the point at which the high side wall meets a roof plane.
Insulation	Any material used in building construction to reduce heat transfer.
Lean-to	A structure having only one slope and depending upon another structure for partial support.
Loc Seam	Concealed fastener roof, A NBG vertical rib standing seam system.
Longitudinal	The direction parallel to the ridge or sidewall of a building. Commonly, the direction referred to as the building length.
Manufacturer	A party who designs and fabricates a metal building system. The manufacturer converts raw material into finished metal building system components.
Manufacturer's Engineer	An engineer employed by a manufacturer who is in responsible charge of the structural design of a metal building system fabricated by the manufacturer.
Metal building	A complete integrated set of mutually dependent components and system assemblies that form a building including primary and secondary framing, covering and accessories, and are manufactured to permit inspection on site prior to assembly or erection.
Mezzanine	An intermediate level between floor and ceiling occupying a partial area of the floor space.
Part mark	A number given to each separate part of the building for identification. Also called a mark number and part number.
Peak	The uppermost point of a gable.
Ponding	The accumulation of water at low or irregular roof areas; also used to refer to the progressive accumulation of water from roof deflection due to rain loads.
Purlin	Cold formed secondary structural used as roof system supports.
Rafter	The main beam supporting the roof system.

Ridge	The highest line of a gabled roof; on a gabled roof system, the ridge is where the uppermost roof slopes converge.
SSII	Concealed fastener roof, A NBG trapezoidal standing seam system.
SS360	Concealed fastener roof, A NBG trapezoidal standing seam system.
Standing seam	A roof system designed to be fastened to roof structural members through the use of clips rather than by through-fastening. Standing seam roof systems allow for thermal expansion and contraction and reduce the number of panel penetrations on roof systems.
Transverse	The direction parallel to the endwall of a building. Commonly, the direction referred to as the building width.
White Rust	Normally zinc oxide or aluminum oxide formed as the result of Galvalume® weathering; it is this property of Galvalume® which helps to protect the steel substrate beneath.
Wind bracing	Bracing members in the roof and sidewall planes, normally cables or rods, which provide structural stability to the building system in resisting endwall wind loading. Also commonly referred to as X bracing.

Disclaimer

The information, material, and content in this section are intended for general information purposes only. Any use of content related to this material to any specific application, structure or condition should be based on independent evaluation, review, and verification of its unrestricted availability for such use, and determination of suitability for the application by professionally qualified personnel. No license under any NBG patents or other proprietary interest is implied by the publication of this information. Those making use of or relying upon the information enclosed assume all risks and liability arising from such use or reliance.

August 22, 2024

Re: SDS Supplier Notification for EPCRA and OSHA regulations

Dear Kirby Customer:

Please be advised that pursuant to Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) we are providing you with notification that our products may contain reportable chemicals listed under EPCRA Section 313. The enclosed SDS lists each of the reportable chemicals that may be contained in the products available to you.

This SDS is also being provided to you to meet requirements of the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200) which requires manufacturers to supply their customers with SDS's for certain products. The SDS contains vital information relative to the product's safe handling. Please ensure that all persons handling this product have ready access to the information contained in this SDS and are familiar with its contents.

If you are unsure whether you are subject to the reporting requirements of EPCRA Section 313, or need more information, call EPA's EPCRA department. Please note that if you process, repackage, or otherwise redistribute this product to industrial customers, a similar notice to this one must be sent to those customers.

Sincerely,

Environmental Management Representative

Kirby Building Systems

SAFETY DATA SHEET

Section 1. Identification

Product identifier : 220D-253A

Product name : DARK GRAY VACUUM

Date of issue : 12/7/2022

Version : 4.01

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Coating component.

Uses advised against : Not for sale to or use by consumers.

Supplier's details : Axalta Coating Systems, LLC
50 Applied Bank Blvd.
Suite 300
Glen Mills, PA 19342
USA

Product information 855-6AXALTA

Emergency telephone number : (CHEMTREC) - 800-424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 1B

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P264 - Wash hands thoroughly after handling.

Section 2. Hazards identification

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	CAS number	Concentration
Limestone	1317-65-3	≥10 - ≤25
titanium dioxide	13463-67-7	≤5
2-butoxyethanol	111-76-2	≤3
3-butoxypropan-2-ol	5131-66-8	≤3
butan-2-ol	78-92-2	≤3
dibutyl phthalate	84-74-2	≤1
carbon black, non respirable	1333-86-4	≤1
Quartz	14808-60-7	≤0.3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 4. First aid measures

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Storage code : IIIB

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**OSHA PEL 1989 (United States, 3/1989). [Calcium carbonate]** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **NIOSH REL (United States, 10/2020). [calcium carbonate]** TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total
titanium dioxide	**OSHA PEL 1989 (United States, 3/1989).** TWA: 10 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 15 mg/m³ 8 hours. Form: Total dust **ACGIH TLV (United States, 1/2022).** TWA: 2.5 mg/m³ 8 hours. Form: respirable fraction, finescale particles
2-butoxyethanol	**ACGIH TLV (United States, 1/2022).** TWA: 20 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989). Absorbed**

Section 8. Exposure controls/personal protection

	through skin. TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020). Absorbed through skin.** TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018). Absorbed through skin.** TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours.
3-butoxypropan-2-ol	None.
butan-2-ol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 305 mg/m³ 8 hours. **ACGIH TLV (United States, 1/2022).** TWA: 100 ppm 8 hours. TWA: 303 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 100 ppm 10 hours. TWA: 305 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 455 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 150 ppm 8 hours. TWA: 450 mg/m³ 8 hours.
dibutyl phthalate	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. **ACGIH TLV (United States, 1/2022).** TWA: 5 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 5 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours.
carbon black, non respirable	**ACGIH TLV (United States, 1/2022).** TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL 1989 (United States, 3/1989).** TWA: 3.5 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 3.5 mg/m³ 10 hours. TWA: 0.1 mg of PAHs/cm³ 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 3.5 mg/m³ 8 hours.
crystalline silica, non-respirable	**OSHA PEL (United States, 5/2018). [Silica, crystalline]** TWA: 50 µg/m³ 8 hours. Form: Respirable dust **OSHA PEL Z3 (United States, 6/2016).** TWA: 30 mg/m³ / (%SiO2+2) 8 hours. Form: Total dust

Section 8. Exposure controls/personal protection

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Gray.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not applicable.

Boiling point : 100 to 100°C (212 to 212°F)

Flash point : Closed cup: 94°C (201.2°F) [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : 0.75 kPa (5.6 mm Hg)

Vapor density : Not available.

Density : 1.166 g/cm³

Solubility(ies) :

Media	Result
cold water	Soluble

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : 230°C (446°F)

Decomposition temperature : Not applicable.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-butoxyethanol	LD50 Dermal	Rat	2010 mg/kg	-
	LD50 Oral	Rat	917 mg/kg	-
3-butoxypropan-2-ol	LD50 Dermal	Rabbit	3100 mg/kg	-
	LD50 Oral	Rat	3300 mg/kg	-
butan-2-ol	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	48500 mg/m³	4 hours
	LD50 Oral	Rat	2054 mg/kg	-
dibutyl phthalate	LD50 Oral	Rat	7499 mg/kg	-
carbon black, non respirable	LD50 Oral	Rat	>15400 mg/kg	-
crystalline silica, non-	LC50 Inhalation Dusts and mists	Rat	12.6 mg/l	4 hours

Section 11. Toxicological information

respirable				

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
butan-2-ol	Eyes - Severe irritant	Rabbit	-	0.1 Ml	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-
2-butoxyethanol	-	3	-
carbon black, non respirable	-	2B	-
crystalline silica, non-respirable	-	1	Known to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
butan-2-ol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
crystalline silica, non-respirable	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Section 11. Toxicological information

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	20680.69 mg/kg
Dermal	30875.87 mg/kg
Inhalation (gases)	570471 ppm
Inhalation (vapors)	375.13 mg/l

Section 11. Toxicological information

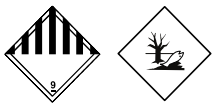
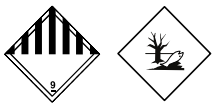
Section 12. Ecological information

There are no data available on the product itself. The product should not be allowed to enter drains or watercourses waterways.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	UN3082	UN3082
UN proper shipping name	-	-	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (trizinc bis (orthophosphate))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (trizinc bis (orthophosphate))
Transport hazard class(es)	-	-	-	9 	9 
Packing group	-	-	-	III	III
Environmental hazards	No.	No.	No.	Yes.	Yes.

Additional information

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment information.

Section 15. Regulatory information

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

SARA 304 RQ

SARA 304 RQ : 27418293.5 lbs / 12447905.2 kg [2820230.4 gal / 10675733.5 L]

SARA 311/312

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 1B

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	2-butoxyethanol butan-2-ol trizinc bis(orthophosphate)	111-76-2 78-92-2 7779-90-0	≤3 ≤3 ≤3
Supplier notification	2-butoxyethanol butan-2-ol trizinc bis(orthophosphate)	111-76-2 78-92-2 7779-90-0	≤3 ≤3 ≤3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

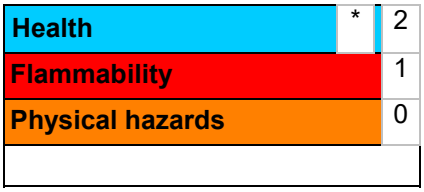
Inventory list

Canada : At least one component is not listed.

United States : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

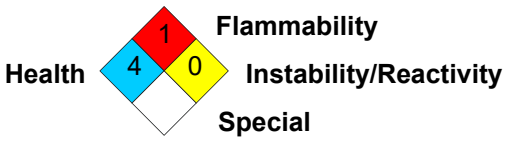


Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Section 16. Other information

National Fire Protection Association (U.S.A.)



History

Date of issue : 12/7/2022

Version : 4.01

Product stewardship and regulatory compliance.

Key to abbreviations : ATE = Acute Toxicity Estimate
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

This product is intended for industrial use only.

Safety Data Sheet (SDS) content is believed to be accurate as of its issue date, but is subject to change as new information is received by Axalta Coatings Systems, LLC or any of its subsidiaries or affiliates (Axalta). This SDS may incorporate information that has been provided to Axalta by its suppliers. Users should ensure that they are referring to the most current version of the SDS. Users are responsible for following the precautions identified in this SDS. It is the users' responsibility to comply with all laws and regulations applicable to the safe handling, use, and disposal of the product.

Users of Axalta products should read all relevant product information prior to use, and make their own determination as to the suitability of the products for their intended use. Except as otherwise required by applicable law, AXALTA MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The information on this SDS relates only to the specific product identified in Section 1, Identification, and does not relate to its possible use in combination with any other material or in any specific process. If this product is to be used in combination with other products, Axalta encourages you to read and understand the SDS for all products prior to use.

SAFETY DATA SHEET

Section 1. Identification

Product identifier : 220R-508A

Product name : MTH BROWN VACUUM PRIMER

Date of issue : 7/5/2022

Version : 4

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Coating component.

Uses advised against : Not for sale to or use by consumers.

Supplier's details : Axalta Coating Systems, LLC
50 Applied Bank Blvd.
Suite 300
Glen Mills, PA 19342
USA

Product information 855-6AXALTA

Emergency telephone number : (CHEMTREC) - 800-424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 1B

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P264 - Wash thoroughly after handling.

Section 2. Hazards identification

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Limestone	≤10	1317-65-3
2-butoxyethanol	≤3	111-76-2
3-butoxypropan-2-ol	≤3	5131-66-8
butan-2-ol	≤3	78-92-2
dibutyl phthalate	≤1	84-74-2
carbon black, non respirable	≤0.3	1333-86-4
crystalline silica, non-respirable	≤0.3	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Section 4. First aid measures

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
phosphorus oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Storage code : IIIB

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **NIOSH REL (United States, 10/2020).** TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total
2-butoxyethanol	**ACGIH TLV (United States, 1/2021).** TWA: 20 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.** TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020). Absorbed through skin.** TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018). Absorbed through skin.** TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours.
3-butoxypropan-2-ol	None.
butan-2-ol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 305 mg/m³ 8 hours. **ACGIH TLV (United States, 1/2021).** TWA: 100 ppm 8 hours. TWA: 303 mg/m³ 8 hours.

Section 8. Exposure controls/personal protection

	NIOSH REL (United States, 10/2020). TWA: 100 ppm 10 hours. TWA: 305 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 455 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 150 ppm 8 hours. TWA: 450 mg/m³ 8 hours.
dibutyl phthalate	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. **ACGIH TLV (United States, 1/2021).** TWA: 5 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 5 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours.
carbon black, non respirable	**ACGIH TLV (United States, 1/2021).** TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL 1989 (United States, 3/1989).** TWA: 3.5 mg/m³ 8 hours. **NIOSH REL (United States, 10/2020).** TWA: 3.5 mg/m³ 10 hours. TWA: 0.1 mg of PAHs/cm³ 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 3.5 mg/m³ 8 hours.
crystalline silica, non-respirable	**OSHA PEL (United States, 5/2018).** TWA: 50 µg/m³ 8 hours. Form: Respirable dust **OSHA PEL Z3 (United States, 6/2016).** TWA: 30 mg/m³ / (%SiO2+2) 8 hours. Form: Total dust

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Brown.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not applicable.

Boiling point : 100 to 100°C (212 to 212°F)

Flash point : Closed cup: 94°C (201.2°F) [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : 0.72 kPa (5.4 mm Hg)

Vapor density : Not available.

Density : 1.181 g/cm³

Solubility : Soluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not applicable.

Auto-ignition temperature : 230°C (446°F)

Decomposition temperature : Not applicable.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-butoxyethanol	LD50 Dermal	Rat	2010 mg/kg	-
	LD50 Oral	Rat	917 mg/kg	-
3-butoxypropan-2-ol	LD50 Dermal	Rabbit	3100 mg/kg	-
	LD50 Oral	Rat	3300 mg/kg	-
butan-2-ol	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	48500 mg/m³	4 hours
	LD50 Oral	Rat	2054 mg/kg	-
dibutyl phthalate	LD50 Oral	Rat	7499 mg/kg	-
carbon black, non respirable	LD50 Oral	Rat	>15400 mg/kg	-
crystalline silica, non-respirable	LC50 Inhalation Dusts and mists	Rat	12.6 mg/l	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
butan-2-ol	Eyes - Severe irritant	Rabbit	-	0.1 Ml	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
2-butoxyethanol carbon black, non respirable crystalline silica, non-respirable	- - -	3 2B 1	- - Known to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
butan-2-ol	Category 3 Category 3	-	Respiratory tract irritation Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
crystalline silica, non-respirable	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Skin contact : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 11. Toxicological information

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : May damage fertility.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	23162.5 mg/kg
Dermal	34788.05 mg/kg
Inhalation (gases)	627672.51 ppm
Inhalation (vapors)	421.09 mg/l

Section 12. Ecological information

There are no data available on the product itself. The product should not be allowed to enter drains or watercourses waterways.

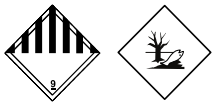
Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues.

Section 13. Disposal considerations

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	UN3082	UN3082
UN proper shipping name	-	-	-	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (trizinc bis (orthophosphate))	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (trizinc bis (orthophosphate))
Transport hazard class(es)	-	-	-	9 	9 
Packing group	-	-	-	III	III
Environmental hazards	No.	No.	No.	Yes.	Yes.

Additional information

IMDG : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.

IATA : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment information.

Section 15. Regulatory information

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

SARA 304 RQ

SARA 304 RQ : 29958058.7 lbs / 13600958.7 kg [3042331.2 gal / 11516476.4 L]

SARA 311/312

Section 15. Regulatory information

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 1B

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	2-butoxyethanol butan-2-ol trizinc bis(orthophosphate)	111-76-2 78-92-2 7779-90-0	≤3 ≤3 ≤3
Supplier notification	2-butoxyethanol butan-2-ol trizinc bis(orthophosphate)	111-76-2 78-92-2 7779-90-0	≤3 ≤3 ≤3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

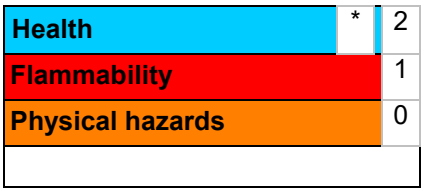
Inventory list

Canada : At least one component is not listed.

United States : All components are listed or exempted.

Section 16. Other information

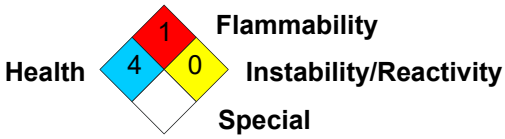
Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue : 7/5/2022

Version : 4

Product stewardship and regulatory compliance.

Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

This product is intended for industrial use only.

Safety Data Sheet (SDS) content is believed to be accurate as of its issue date, but is subject to change as new information is received by Axalta Coatings Systems, LLC or any of its subsidiaries or affiliates (Axalta). This SDS may incorporate information that has been provided to Axalta by its suppliers. Users should ensure that they are referring to the most current version of the SDS. Users are responsible for following the precautions identified in this SDS. It is the users' responsibility to comply with all laws and regulations applicable to the safe handling, use, and disposal of the product.

Users of Axalta products should read all relevant product information prior to use, and make their own determination as to the suitability of the products for their intended use. Except as otherwise required by applicable law, AXALTA MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The information on this SDS relates only to the specific product identified in Section 1, Identification, and does not relate to its possible use in combination with any other material or in any specific process. If this product is to be used in combination with other products, Axalta encourages you to read and understand the SDS for all products prior to use.

SAFETY DATA SHEET

Section 1. Identification

Product identifier : 220R-458

Product name : MTH BROWN NULO SPRAY

Date of issue : 9/16/2020

Version : 1

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Coating component for professional use.

Uses advised against : For industrial use only by trained professionals. Not for sale to or use by consumers.

Supplier's details : Axalta Coating Systems, LLC
Two Commerce Square,
2001 Market Street
Suite 3600
Philadelphia, PA 19109
USA

Product information 855-6AXALTA

Emergency telephone number : (CHEMTREC) - 800-424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H350 - May cause cancer.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P261 - Avoid breathing vapor.
P264 - Wash thoroughly after handling.

Section 2. Hazards identification

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Limestone	≥25 - ≤50	1317-65-3
Soybean oil, polymer with dicyclopentadiene	≥10 - ≤17	68512-79-8
2-butoxyethanol	≤3	111-76-2
butan-2-ol	≤2.2	78-92-2
Quartz (SiO2)	<1	14808-60-7
2,4,7,9-tetramethyldec-5-yne-4,7-diol	≤0.3	126-86-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Storage code : IIIB

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **NIOSH REL (United States, 10/2016).** TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total
Soybean oil, polymer with dicyclopentadiene	None.
2-butoxyethanol	**ACGIH TLV (United States, 3/2019).** TWA: 20 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.** TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016). Absorbed through skin.** TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018). Absorbed through skin.** TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours.
butan-2-ol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 305 mg/m³ 8 hours. **ACGIH TLV (United States, 3/2019).** TWA: 100 ppm 8 hours. TWA: 303 mg/m³ 8 hours.

Section 8. Exposure controls/personal protection

	NIOSH REL (United States, 10/2016). TWA: 100 ppm 10 hours. TWA: 305 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 455 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 150 ppm 8 hours. TWA: 450 mg/m³ 8 hours.
Quartz (SiO2)	**OSHA PEL (United States, 5/2018).** TWA: 50 µg/m³ 8 hours. Form: Respirable dust **OSHA PEL Z3 (United States, 6/2016).** TWA: 30 mg/m³ / (%SiO2+2) 8 hours. Form: Total dust
2,4,7,9-tetramethyldec-5-yne-4,7-diol	None.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Not available.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not applicable.

Boiling point : Not applicable.

Flash point : Closed cup: 94°C (201.2°F) [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : 0.29 kPa (2.2 mm Hg) [room temperature]

Vapor density : Not available.

Density : 1.382 g/cm³

Solubility : Soluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : 224°C (435.2°F)

Decomposition temperature : Not applicable.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
2-butoxyethanol	LD50 Dermal	Rat	2010 mg/kg	-
	LD50 Oral	Rat	917 mg/kg	-
butan-2-ol	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	48500 mg/m³	4 hours
	LD50 Oral	Rat	2054 mg/kg	-
Quartz (SiO2)	LC50 Inhalation Dusts and mists	Rat	12.6 mg/l	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
2-butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
butan-2-ol	Eyes - Severe irritant	Rabbit	-	0.1 Ml	-
2,4,7,9-tetramethyldec-5-yne-4,7-diol	Eyes - Severe irritant	Rabbit	-	0.1 Ml	-
	Skin - Mild irritant	Rabbit	-	0.5 gm	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
2-butoxyethanol	-	3	-
Quartz (SiO2)	-	1	Known to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Soybean oil, polymer with dicyclopentadiene	Category 3	-	Respiratory tract irritation
butan-2-ol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects

Specific target organ toxicity (repeated exposure)

Section 11. Toxicological information

Name	Category	Route of exposure	Target organs
Quartz (SiO2)	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Section 11. Toxicological information

Acute toxicity estimates

Route	ATE value
Oral	12023.62 mg/kg
Dermal	14065.09 mg/kg
Inhalation (gases)	491647.06 ppm
Inhalation (vapors)	349.55 mg/l

Section 12. Ecological information

There are no data available on the product itself. The product should not be allowed to enter drains or watercourses waterways.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Additional information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Section 14. Transport information

Transport in bulk according to IMO instruments : Not available.

The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment information.

Section 15. Regulatory information

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

SARA 304 RQ

SARA 304 RQ : 104090767.1 lbs / 47257208.3 kg [9033309.5 gal / 34194796.2 L]

SARA 311/312

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	2-butoxyethanol butan-2-ol	111-76-2 78-92-2	≤3 ≤2.2
Supplier notification	2-butoxyethanol butan-2-ol	111-76-2 78-92-2	≤3 ≤2.2

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Inventory list

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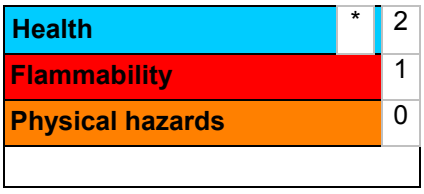
United States : All components are listed or exempted.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



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The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)

Section 16. Other information

History

Date of issue : 9/16/2020

Version : 1

Product stewardship and regulatory compliance.

Key to abbreviations : ATE = Acute Toxicity Estimate
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IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

This product is intended for industrial use only.

Safety Data Sheet (SDS) content is believed to be accurate as of its issue date, but is subject to change as new information is received by Axalta Coatings Systems, LLC or any of its subsidiaries or affiliates (Axalta). This SDS may incorporate information that has been provided to Axalta by its suppliers. Users should ensure that they are referring to the most current version of the SDS. Users are responsible for following the precautions identified in this SDS. It is the users' responsibility to comply with all laws and regulations applicable to the safe handling, use, and disposal of the product.

Users of Axalta products should read all relevant product information prior to use, and make their own determination as to the suitability of the products for their intended use. Except as otherwise required by applicable law, AXALTA MAKES NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The information on this SDS relates only to the specific product identified in Section 1, Identification, and does not relate to its possible use in combination with any other material or in any specific process. If this product is to be used in combination with other products, Axalta encourages you to read and understand the SDS for all products prior to use.

SAFETY DATA SHEET

Section 1. Identification

Product identifier : 220D-366B

Product name : DARK GRAY NULO SPRAY

Date of issue : 9/16/2020

Version : 1

Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Coating component for professional use.

Uses advised against : For industrial use only by trained professionals. Not for sale to or use by consumers.

Supplier's details : Axalta Coating Systems, LLC
Two Commerce Square,
2001 Market Street
Suite 3600
Philadelphia, PA 19109
USA

Product information 855-6AXALTA

Emergency telephone number : (CHEMTREC) - 800-424-9300

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H350 - May cause cancer.

Precautionary statements

Prevention : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P261 - Avoid breathing vapor.
P264 - Wash thoroughly after handling.

Section 2. Hazards identification

Response : P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P363 - Wash contaminated clothing before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	%	CAS number
Limestone	≥25 - ≤50	1317-65-3
Soybean oil, polymer with dicyclopentadiene	≥10 - ≤17	68512-79-8
titanium dioxide	≤5	13463-67-7
2-butoxyethanol	≤3	111-76-2
butan-2-ol	≤2.2	78-92-2
Quartz (SiO2)	<1	14808-60-7
carbon black	≤1	1333-86-4
2,4,7,9-tetramethyldec-5-yne-4,7-diol	≤0.3	126-86-3

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Section 4. First aid measures

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Section 5. Fire-fighting measures

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Storage code : IIIB

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Limestone	**OSHA PEL 1989 (United States, 3/1989).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust **NIOSH REL (United States, 10/2016).** TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total
Soybean oil, polymer with dicyclopentadiene	None.
titanium dioxide	**ACGIH TLV (United States, 3/2019).** TWA: 10 mg/m³ 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 10 mg/m³ 8 hours. Form: Total dust **OSHA PEL (United States, 5/2018).** TWA: 15 mg/m³ 8 hours. Form: Total dust
2-butoxyethanol	**ACGIH TLV (United States, 3/2019).** TWA: 20 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989). Absorbed through skin.** TWA: 25 ppm 8 hours. TWA: 120 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016). Absorbed through skin.** TWA: 5 ppm 10 hours. TWA: 24 mg/m³ 10 hours. **OSHA PEL (United States, 5/2018). Absorbed through skin.** TWA: 50 ppm 8 hours. TWA: 240 mg/m³ 8 hours.

Section 8. Exposure controls/personal protection

butan-2-ol	**OSHA PEL 1989 (United States, 3/1989).** TWA: 100 ppm 8 hours. TWA: 305 mg/m³ 8 hours. **ACGIH TLV (United States, 3/2019).** TWA: 100 ppm 8 hours. TWA: 303 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 100 ppm 10 hours. TWA: 305 mg/m³ 10 hours. STEL: 150 ppm 15 minutes. STEL: 455 mg/m³ 15 minutes. **OSHA PEL (United States, 5/2018).** TWA: 150 ppm 8 hours. TWA: 450 mg/m³ 8 hours.
Quartz (SiO2)	**OSHA PEL (United States, 5/2018).** TWA: 50 µg/m³ 8 hours. Form: Respirable dust **OSHA PEL Z3 (United States, 6/2016).** TWA: 30 mg/m³ / (%SiO2+2) 8 hours. Form: Total dust
carbon black	**OSHA PEL 1989 (United States, 3/1989).** TWA: 3.5 mg/m³ 8 hours. **NIOSH REL (United States, 10/2016).** TWA: 3.5 mg/m³ 10 hours. TWA: 0.1 mg of PAHs/cm³ 10 hours. **OSHA PEL (United States, 5/2018).** TWA: 3.5 mg/m³ 8 hours. **ACGIH TLV (United States, 3/2018).** TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction
2,4,7,9-tetramethyldec-5-yne-4,7-diol	None.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid.

Color : Gray.

Odor : Not available.

Odor threshold : Not available.

pH : Not applicable.

Melting point : Not applicable.

Boiling point : Not applicable.

Flash point : Closed cup: 94°C (201.2°F) [Product does not sustain combustion.]

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : 0.31 kPa (2.3 mm Hg) [room temperature]

Vapor density : Not available.

Density : 1.37 g/cm³

Solubility : Soluble in the following materials: cold water.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : 224°C (435.2°F)

Decomposition temperature : Not applicable.

Viscosity : Not available.

Flow time (ISO 2431) : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Incompatible materials : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-butoxyethanol	LD50 Dermal	Rat	2010 mg/kg	-
	LD50 Oral	Rat	917 mg/kg	-
butan-2-ol	LC50 Inhalation Gas.	Rat	8000 ppm	4 hours
	LC50 Inhalation Vapor	Rat	48500 mg/m³	4 hours
	LD50 Oral	Rat	2054 mg/kg	-
Quartz (SiO2)	LC50 Inhalation Dusts and mists	Rat	12.6 mg/l	4 hours
carbon black	LD50 Oral	Rat	>15400 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 ug l	-
2-butoxyethanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
butan-2-ol	Eyes - Severe irritant	Rabbit	-	0.1 Ml	-
2,4,7,9-tetramethyldec-5-yne-4,7-diol	Eyes - Severe irritant	Rabbit	-	0.1 Ml	-
	Skin - Mild irritant	Rabbit	-	0.5 gm	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
titanium dioxide	-	2B	-
2-butoxyethanol	-	3	-
Quartz (SiO2)	-	1	Known to be a human carcinogen.
carbon black	-	2B	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Soybean oil, polymer with dicyclopentadiene	Category 3	-	Respiratory tract irritation
butan-2-ol	Category 3	-	Respiratory tract irritation
	Category 3		Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Quartz (SiO2)	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	11994.65 mg/kg
Dermal	14031.27 mg/kg
Inhalation (gases)	472867.84 ppm
Inhalation (vapors)	336.17 mg/l

Section 12. Ecological information

There are no data available on the product itself. The product should not be allowed to enter drains or watercourses waterways.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-	-	-
Transport hazard class(es)	-	-	-	-	-
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

Additional information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

The actual shipping description for this product may vary based several factors including, but not limited to, the volume of material, size of the container, mode of transport and use of exemptions or exceptions found in the applicable regulations. The information provided in Section 14 is one possible shipping description for this product. Consult your shipping specialist or supplier for appropriate assignment information.

Section 15. Regulatory information

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

SARA 304 RQ

SARA 304 RQ : 103842159.9 lbs / 47144340.6 kg [9090669.5 gal / 34411927.4 L]

SARA 311/312

Classification : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	2-butoxyethanol butan-2-ol	111-76-2 78-92-2	≤3 ≤2.2
Supplier notification	2-butoxyethanol butan-2-ol	111-76-2 78-92-2	≤3 ≤2.2

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

Section 15. Regulatory information

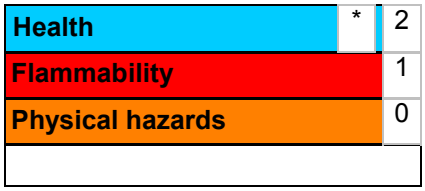
Inventory list

Canada : At least one component is not listed.

United States : All components are listed or exempted.

Section 16. Other information

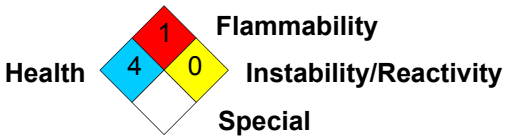
Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue : 9/16/2020

Version : 1

Product stewardship and regulatory compliance.

Key to abbreviations : ATE = Acute Toxicity Estimate
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations

Indicates information that has changed from previously issued version.

Notice to reader

Section 16. Other information

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Fuzion 1.8 lb/ft^3 STD 29 kg/m^3

Effective Date: 6/24/2016

PHYSICAL PROPERTIES		TEST METHOD	IMPERIAL UNITS	VALUES	METRIC UNITS	VALUES
Density - Nominal		ASTM D3575 - Suffix W	lb/ft³	1.8	kg/m³	29
Tensile Strength	MD	ASTM D3575 - Suffix T	PSI	43.8	kPa	302
Tensile Strength	TD	ASTM D3575 - Suffix G		38.0		262
Tear strength	MD	ASTMD3575 - Suffix T	lbf/in	11.4	N/mm	2.00
Tear strength	TD	ASTM D3575 - Suffix G		11.9		2.08
Elongation at Break	MD	ASTM D3575 - Suffix T	%	153	%	153
Elongation at Break	TD	ASTM D3575 - Suffix T		164		164
Shore Hardness		ASTM D2440	00	51	00	51
Compression Deflection	25%	ASTM D3575 - Suffix D	PSI	5.6	kPa	39
	50%		PSI	14.0		97
Compression Set	50%, 24 hrs	ASTM D3575 - Suffix B	%	26	%	26
Working Temperature Range			ºF	-76 / 194	ºC	-60 / 90
Water Absorption, 7 days		DIN 53428	% Vol (max)	1	% Vol (max)	1
Thermal Conductivity, 70ºF (23.9ºC)		ASTM C177	BTU·in/hr·ft²·°F	0.273	W/m·K	0.0393
Flammability, > 1/4"		FMVSS302	4"/min	PASS	100 mm/min	PASS
Thermal Stability, 24 hrs at 158ºF (70ºC)		ASTM D3575 - Suffix S	%	< 2	%	< 2

Fuzion is a closed cell chemically crosslinked polyethylene foam in roll form.
SDS sheets available upon request.

Data represents typical values and should be considered as a guideline only.
Imperial data is converted from the metric results measured by testing according to ASTM standards.
The information above on FUZION chemically crosslinked polyethylene foam is presented to the best of our knowledge.

Canadian Operations: 840 Division St. Cobourg, ON Canada, K9A 5V2
Palziv NA Manufacturing Headquarters: 7966 NC 56 Hwy Louisburg, NC 27549
Phone: 919.497.0010 Fax: 919.496.2523
www.palzivna.com

Safety Data Sheet

55% Aluminum-Zinc Alloy Coated Steel

Section 1 - Chemical Product and Company identification

Product Name:	**55% Aluminum-Zinc Alloy Acrylic Coated Steel**
Manufacturer:	**TERNIUM USA, Inc.** 2500 Ron Bean Blvd. Shreveport, LA 71115 Phone: (318) 698 7500
Revision date:	12/31/2019

Section 2- Hazards identification

Emergency Overview

Product does not pose a health hazard in its normal form. Inhalation of metal dust and fume may result from further processing by the user, particularly during welding, burning, grinding and machining activities. These potential health hazards should be evaluated by the user. A non-metallic passivation treatment is normally applied based upon customer/ end use criteria. These non-metallic coatings may contain hazardous substances of varying amounts. During processing, substances of varying chemical composition and quantity may be generated by the surface passivant. MSDS information regarding the surface passivant shall be supplied to the user upon request.

carcinogenetic:
Certain chromium and nickel compounds as well as organic compounds found in various coating materials have been listed as carcinogens by the NTP, IARC, or OSHA.

Medical conditions aggravated by long term exposure:
Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc) may be adversely affected by any fume or airborne particulate matter exposure.

Chronic effects:
Chronic inhalation concentrations of iron oxide fumes or dusts may lead to begin pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxides may possible enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Chronic inhalation concentrations of aluminum fumes or

dusts may lead a fibrotic lung condition known as Shaver's disease; however, evidence for this is not conclusive since affected workers were exposed to other substances (silica as well). The inhalation of high concentrations of dust from manganese, copper, lead and or zinc in the respirable particles size range can cause an influenza-like illness termed metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in mouth, dryness and irritation of the throat, followed by weakness, muscle pain, fever and chills. Continuous exposures to high concentrations of manganese can cause central nervous system disorders and manganese pneumonia. Fibrosis of lung tissue from manganese exposure has also been reported for products containing manganese only. Overexposure to aluminum dust can cause shortness of breath. Long term inhalation exposure to high concentrations (overexposure) to pneumoconiosis' agents may act synergistically with inhalation of unprotected skin may result in skin irritation. Torching of burning operations on steel products with oil or organic coating may produce emissions which can be irritating to the eyes and respiratory tract.

Section 3 – Composition/ Information on Ingredients

Ingredient Name	CAS No.	Weight (%)	
		Min	Max
Base Steel			
Iron	7439-89-6	Balance	99.00
Carbon	7440-44-0		0.25
Manganese compounds (as Mn)	7439-96-5		1.15
Phosphorus	7723-14-0		0.20
Sulfur	7704-34-9		0.05
Silicon	7440-21-3		0.05
Aluminum	7429-90-5		0.10
Note: Base steel may contain the following trace of residual elements: Chromium (0.15% max.), Copper (0.25% max), Molybdenum (0.10% Max), Nickel (0.20% max.), Tin (0.03% max.), Titanium (0.15% max) and Vanadium (0.10% max.)			
Metallic Coating			
Zinc	7440-66-5	40.00	48.00
Aluminum	7429-90-5	51.00	58.00

Silicon	7440-21-3	1.30	1.90
Iron	7439-89-6		0.03
Surface Resin Coating			
Styrene Acrylic Copolymer	100-42-5	45.00	47.00
Water	7732-18-5	40.00	48.00
Styrene Monomer			0.20
Acrylate Monomer			0.20
Cyclic Biocide Halogenated			0.20
Note: The weight percentages of this compound may be below the levels for which reporting of exact percentage is required in section 313 of SARA 40CFR Part 372.38			

Section 4 – First Aid Measures

Eye contact:
Treat any foreign body in eye by flushing with large amounts of water. Seek medical attention immediately.

Skin contact:
Skin hazards are not expected. However should dermatitis develop, affected area should be washed with mild soap and water. If irritation or other symptoms develop, seek medical attention. Precautions should be taken to protect against sharp edges. If skin is abraded by handling, seek medical attention.

Ingestion:
Ingestion hazards are not expected.

Inhalation:
For treatment or overexposure to fumes and/or particulates, remove exposed individual to fresh air and seek for medical attention. Administer artificial respiration or oxygen if breathing is difficult or has stopped.

Section 5 – Fire Fighting Measures

Not flammable or combustible. Steel products in the solid state present no fire or explosion hazard and do not contribute to the combustion of other materials.

Section 6 – Accidental Release Measures

Not applicable to steel in solid state. For spills involving finely divide particles, clean up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid use compressed air. Do not release into sewers or waterways. Collect material in

appropriate, labeled containers for recovery or disposal in accordance with federal, state and local regulations.

Section 7 – Handling and Storage

Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and /or dust.

Section 8 – Exposure Control / Personal Protection

Respiratory protection:
NIOSH/MSHA approved dust and fume respirators should be used to avoid excessive inhalation of particulates. Appropriate respirator selection depends on the magnitude of exposure.

Hand protection:
Protective gloves should be worn as required for welding, burning or handling operations. If material is supplied with oil or other organic coating, wear protective gloves. However doe not continue to use gloves to work clothing that becomes saturated with oil. Wash hands and any additional contact areas with soap and water or waterless hand cleaner.

Eye protection:
Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations.

Engineering measures:
Local exhaust ventilation should be provided when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure.

Personal protection equipment:
Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and /or dust.

Section 9– Physical and Chemical Properties

Physical state: Solid
Appearance: Silver, bright crystalline appearance
Odor: None
Vapor pressure (mm Hg): N/A
Vapor Density (air=1): N/A
Formula Weight: N/A
Density: N/A
Sp. Gravity (H2O=1): 7.86000
pH: N/A

Water solubility: Insoluble
Other solubility: N/A
Boiling point/range: N/A
Freezing/Melting Point: N/A
Viscosity: N/A
Refractive Index: N/A
Surface Tension: N/A
% Volatile: N/A
Evaporation Rate: N/A

Section 10 – Stability and Reactivity

Chemical stability:
Stable under normal conditions of use, storage and transport.

Hazardous conditions to avoid:
Will react with strong acids to liberate hydrogen. Finely divided material may react with water, strong oxidizers, alkaline, and hydrogenated compounds. At temperatures exceeding the melting point of the metallic coating, fumes may be liberated which contain oxides of the metallic coating constituents. At temperatures exceeding the melting point of the base metal, fumes may be liberated which contain oxides of iron and other steel alloying elements.

Section 11 – Toxicological Information

Ingredient name	LD50 or LC50 Species/ Route	OSHA PEL	ACGIH TLV (mg/m3) /(TWA unless specified)
Base Steel			
Iron	mouse/oral 5.4mg/Kg	10 iron oxide fume	5 iron oxide fume as Fe
Carbon	No information	No established	No established
Manganese Compounds (as Mn)	rat/oral 9mg/Kg	5 ceiling as Mn	5 Dust as Mn 1 Fume as Mn 3 Fume as Mn-STEL
Phosphorus	No information	0.1 Total	No established
Sulfur	No information	15 Total dust	13 as SO2
Silicon	No information	15 Total dust 5 Respirable fraction	10 Total
Aluminum	No information	10 Total dust 5 Respirable fraction	10 Metal dust as Al
Metallic Coating			
Zinc	No information	5 Fume as ZnO	5 Fume as ZnO
Aluminum	No information	10 Total Dust 5 Respirable fraction	10 Metal dust as Al
Silicon	No information	15 Total dust 5 Respirable fraction	10 Total
Iron	Mouse/oral 5.4mg/Kg	10 iron oxide fume	5 iron oxide fume as Fe
Surface Resin Coating			
Styrene Acrylic Copolymer	No information	No established	No established
Water	No information	No established	No established
Styrene Monomer	No information	No established	21350 ppm

Acrylate Monomer	No information	No established	525 ppm
Cyclic Biocide Halogenated	No information	No established	No established

Section 12 – Ecological Information

No data available for product as a whole. However individual components have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife. Lead can be bio-accumulated in plants and water organisms, especially shellfish.

Section 13 – Disposal Consideration

Steel scrap should be recycled whenever possible. Product dusts and fumes from processing operations should also be recycled, or classified by a competent environmental professional and disposed of in accordance with applicable federal, state and local regulations.

Section 14 – Transport Information

Not listed as hazardous substance under 49 CFR 172.101.

DOT Proper Shipping Name - Not regulated

Section 15 – Regulatory Information

SARA 311/312 codes (40CFR370): immediate (acute) health hazard and delayed (chronic) health hazard. SAR 313 (40CFR372.65): Manganese and lead are subject to SARA 313 reporting requirements. Please note that if you prepackage or redistribute this product to industrial customers SAR 313 requires that a notice be sent to those customers.

Air contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): The product as a whole is not listed. However, individual components of the product are listed. OSHA Specifically Regulated Substance: Lead (29 CFR 1910.1025).

Section 16 – Other Information

Proposition 65 Statement:
WARNING; this product may contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

This Material Safety Data Sheet (MSDS) has been prepared in accordance with OSHA Hazard Communication Standard (29 CFR 1910.1200) and the Supplier Notification Requirements of SARA Title III, section 313. This MSDS represents products which may contain toxic chemicals.

The information contained in this MSDS was obtained from sources which are believed to be reliable by the manufacturer. However, the information is provided without any responsibility or warranty, expressed or implied regarding its accuracy or correctness. The conditions or methods of handling storage, use and disposal of this

product are beyond the knowledge of the manufacturer. For this and other reasons, the manufacturer does not assume responsibility and expressly disclaims liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of this product.

Safety Data Sheet

1. IDENTIFICATION

Product Identifier:	Fuzion – standard grades – all densities
Manufacturer:	Palziv North America
Address:	7966 NC 56 Hwy Louisburg, NC 27549
Phone Number:	919-497-0010
Emergency Phone Number:	919-497-0010
Recommended Use:	For industrial and personal uses.
Restrictions on Use:	None.

2. HAZARD IDENTIFICATION

Hazard classification:
This product is not considered hazardous.

3. COMPOSITION/INGREDIENT DATA

Substance (Abbreviation)	Substance (Chemical Name)	Cas#	PHR
LDPE	Polyethylene	9002-88-4	100
DCP	Residuals of Dicumyl Peroxide Decomposition	80-43-3	<1
ADCA	Residuals of Azodicarbonamide Decomposition	123-77-3	< 20
MB	Organic Pigment		< 3
CB	Carbon Black	133-86-4	< 5

4. FIRST AID MEASURES

Ingestion:	If material has been ingested, seek medical advice.
Skin Contact:	There is no risk and no need to work with gloves.
Eye Contact:	Rinse eyes with water. In case of an uncomfortable sensation, consult a doctor or ophthalmologist.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media: CO_2, H_2O, Foam, Dry Chemical Powder
During a fire it is advisable to cool the material with water. Material that was not ignited should, if possible, be removed from the vicinity of the fire to a safe area. Care must be taken not to stand underneath burning material, dripping of burning

molten material may occur.

Smoke may contain toxic substances; it is therefore advisable to wear a mask.

Even after the flames have been extinguished, the material should be cooled with water, in order to prevent a renewed outbreak of the fire due to self-ignition.

6. ACCIDENT RELIEF MEASURES

Protective Equipment:	When cleaning fragments with air pressure, a protective mask should be worn over the nose and mouth and protective goggles should be worn over the eyes.
Environmental Precautions:	None necessary.
Methods for Cleaning Up:	Can be cleaned by any acceptable method: Dust and fragments may be vacuumed, swept or blown away by use of air pressure.

7. HANDLING AND STORAGE

Handling:	No restrictions.
Storage:	It is advisable to store in a ventilated warehouse on pallets raised off the ground. The rolls should be packed in perforated polyethylene sheeting for ventilation. The material must not be stored outside, particularly in the rain or in the sun. Shrink wrap is not advisable.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures to reduce exposure:
If dust or vapor condition is above the recommended level, use local extraction apparatus (likely only in the case of a fire).

Personal Protection Equipment:

Respiratory Protection:	When cleaning fragments with air pressure, a protective mask should be worn over the nose and mouth.
Hand Protection:	There is no need for gloves.
Eye Protection:	Protective goggles should be used when cleaning fragments with air pressure.
Skin and Body Protection:	There is no need for any protective measures.

9. PHYSICAL AND CHEMICAL PROPERTIES

State: Foam PE	**Color:** Various	**Odor:** None
Density: 25-200kg/m^3	**Melting Point**: N/A	**Decomposition Temp**: 400°C
Boiling Point: N/A	**Vapor Pressure**: N/A	**Auto Ignition Temp**: N/A
Flashpoint: N/A	**Explosion Risk**: N/A	**Water Solubility**: None

10. STABILITY AND REACTIVITY

Stability:	(x) Stable ( ) Unstable
Conditions to Avoid:	Temperatures over 150°C.
Hazardous Decomposition Products:	Including but not limited to: Hydrocarbons, CO, Trace Ammonia
Hazardous Polymerization:	( ) may occur (x) will not occur

11. TOXICOLOGICAL INFORMATION

Skin:	No toxicity.
Eye:	Dust may cause irritation.
Ingestion:	Uncomfortable if ingested.
Inhalation:	A high concentration of dust and fragments may cause nausea.
Chronic Toxicity:	No toxicity.

12. ECOLOGICAL INFORMATION

Details for elimination:	The waste can be buried at an appropriate site or burned in a furnace The foam can also be ground down for the production of recycled foams.
Performance in Ecological Sub System:	
Ecotoxicity:	None.

13. DISPOSAL CONSIDERATIONS

Waste from residues/unused:	Dispose of in accordance with local regulations.
Contaminated Packaging:	

14. TRANSPORTATION INFORMATION

ADR/RID-HI/UN No.: Not classified		**Class**:
Proper shipping name:		
IMDG-UN No.: None	**Marine Pollutant:** No	**Class:**
Proper shipping name:		

MFAG:	**MDG Page:**	**EMS:**
ICAO:	**UNI/ID No.:**	**Class:**
Proper shipping name:		

15. REGULATION INFORMATION

Classification according to European directive on classification of hazardous preparations 1272/2008/CE
Symbols:
R-phrases:
S-phrases:

16. OTHER INFORMATION

Date of Last Revision:	12/16/2015
Telephone:	919-497-0010
Fax:	919-496-2523
Website:	www.palzivna.com

TECHNICAL DATA

Rubex MS

HIGH PERFORMANCE ELASTOMERIC ADHESIVE/SEALANT

PRODUCT DESCRIPTION:
Rubex MS exhibits excellent adhesion to many substrates including aluminum, brass,steel, glass, granite, marble, wood and many plastics. Cures fast, even at low temperatures. Rubex MS is highly weather resistant and can be painted with most paints. Contains no solvents or isocyanates and is non-yellowing. USDA accepted.

2. TECHNICAL DATA:

Tack Free Time	Less than an hour @ 77°F/50% RH
Skin Time	Less than 30 minutes @ 77°F/50% RH
Sag	Non-sagging
Tensile Strength	225 psi
Lap Shear (shear rate =1" min)	275 psi
Elongation	275%
High Temperature Resistance	Up to 400°F for short periods
Low Temperature Flexibility	Properties retained to -75°F
Hardness	45-50
UV Ratings	After 2000 hours UV-A no change in appearance or physical properties (ASTM G26)
Corrosive Properties	Non-corrosive
Staining	Non-staining

3. COLORS:
White, colonial white, aluminum gray, black. Other colors available upon request.

4. PACKAGING:
10.3 Il. oz. cartridges, 10.3 & 20 fl. oz. sausage packs, 1, 3, 5, & 55 gallon containers.

5. SURFACE PREPARATION:
Apply to clean, dry surfaces tree of contaminants that can adversely affect adhesion.Remove all old sealant before applying Rubex MS.

6. PAINTING:
Cured Rubex MS may be painted with most industrial & consumer paints.Testing prior to painting is recommended.

7. STORAGE LIFE:
Nine months. For maximum shelf life, store unopened product at or below 80°F.

8. PRECAUTIONS:
Use with adequate ventilation. Inhalation of vapor during application and cure may cause slight eye or throat irritation. In case of contact with eyes, lips, or mouth, flush thoroughly with water.If irritation persists, consult a physician. Avoid repeated, prolonged contact with skin.See MSDS for additional information. Keep out of reach of children.

9. TECHNICAL SERVICE:
Rubex technical representatives are always available to provide assistance. Please contact our Technical Service Department with your questions or requests for specific applications.

10. LIMITED WARRANTY:
Any goods proved defective will be replaced or the purchase price refunded. The limited warranty described herein is in lieu of any other warranty, expressed or implied, including any implied warranty of merchantability or fitness for a particular use. The user shall determine suitability of the product for its intended use. Liability for any incidental or consequential damage or loss is excluded. The user assumes all risks of the product's use, handling and storage.

Distributed by

RUBEX, INC.
3709 GROVE CITY ROAD
GROVE CITY, OHIO 43123

tel 614 875 6343
fax 614 875 9041
web www.rubex-us.com

SECTION 1. IDENTIFICATION

Product name	:	SikaLastomer®-511
Company name	:	Sika Corporation 201 Polito Avenue Lyndhurst, NJ 07071 USA www.sikausa.com
Telephone	:	(201) 933-8800
Telefax	:	(201) 804-1076
E-mail address	:	ehs@sika-corp.com
Emergency telephone	:	CHEMTREC: 800-424-9300 INTERNATIONAL: +1-703-527-3887
Recommended use of the chemical and restrictions on use	:	For further information, refer to product data sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin irritation	:	Category 2
Carcinogenicity (Inhalation)	:	Category 1A

GHS label elements

Hazard pictograms :

Signal Word	:	Danger
Hazard Statements	:	H315 Causes skin irritation. H350 May cause cancer by inhalation.
Precautionary Statements	:	**Prevention:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P264 Wash skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Additional Labeling

There are no ingredients with unknown acute toxicity used in a mixture at a concentration >= 1%.

Other hazards

Intentional misuse by deliberate concentration and inhalation of vapor may be harmful or fatal.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
Distillates (petroleum), hydrotreated light	64742-47-8	Flam. Liq. 3; H226 Skin Irrit. 2; H315 STOT SE 3; H336 Asp. Tox. 1; H304	>= 10 - < 20
Quartz (SiO2)	14808-60-7	Carc. 1A; H350i STOT RE 1; H372 STOT SE 3; H335	>= 0.1 - < 1

Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact	:	Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.
Most important symptoms and effects, both acute and delayed	:	irritant effects Erythema Dermatitis Causes skin irritation. May cause cancer by inhalation.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Deny access to unprotected persons.
Environmental precautions	:	Try to prevent the material from entering drains or water courses. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Advice on safe handling	:	Avoid exceeding the given occupational exposure limits (see section 8). Do not get in eyes, on skin, or on clothing. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Follow standard hygiene measures when handling chemical products.
Conditions for safe storage	:	Store in original container. Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Store in accordance with local regulations.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Distillates (petroleum), hydrotreated light	64742-47-8	TWA (Mist)	5 mg/m3	OSHA Z-1
		TWA	200 mg/m3 (total hydrocarbon vapor)	ACGIH
		TWA (Mist)	5 mg/m3	OSHA P0
Quartz (SiO2)	14808-60-7	TWA (Respirable particulate matter)	0.025 mg/m3	ACGIH
		TWA (Respirable dust)	0.05 mg/m3	OSHA Z-1
		TWA (respirable)	10 mg/m3 / %SiO2+2	OSHA Z-3
		TWA (respirable)	250 mppcf / %SiO2+5	OSHA Z-3
		TWA (respirable dust fraction)	0.1 mg/m3	OSHA P0
		TWA (Respirable particulate matter)	0.025 mg/m3 (Silica)	ACGIH
		TWA (respirable dust fraction)	0.1 mg/m3	OSHA P0
		TWA (Respirable particulate matter)	0.025 mg/m3	ACGIH

		TWA (Respirable particulate matter)	0.025 mg/m3 (Silica)	ACGIH

The above constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : paste

Color : various

Odor : characteristic

Odor Threshold	:	No data available
pH	:	Not applicable
Melting point/range / Freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	Not applicable
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	0.01 hpa
Relative vapor density	:	No data available
Density	:	ca. 1.09 g/cm3 (73 °F / 23 °C)
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	ca. > 20.55 mm2/s (104 °F / 40 °C)
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Volatile organic compounds (VOC) content	:	176 g/l

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	The product is chemically stable.

Possibility of hazardous reactions	:	Stable under recommended storage conditions.
Conditions to avoid	:	No data available
Incompatible materials	:	No data available
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Not classified based on available information.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

May cause cancer by inhalation.

IARC	Group 1: Carcinogenic to humans Quartz (SiO2) (Silica dust, crystalline)	14808-60-7
	Group 2B: Possibly carcinogenic to humans titanium dioxide	13463-67-7
OSHA	OSHA specifically regulated carcinogen Quartz (SiO2) (crystalline silica)	14808-60-7
NTP	Known to be human carcinogen Quartz (SiO2) (Silica, Crystalline (Respirable Size))	14808-60-7

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

Further information

Product:

Remarks : Titanium dioxide (13463-67-7)
In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have shown to cause an increase in lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. The potential for these adverse health effects appears to be closely related to the particle size and the amount of the exposed surface area that comes into contact with the lung. However, tests with other laboratory animals such as mice and hamsters, indicate that rats are significantly more susceptible to the pulmonary overload and inflammation that causes lung cancer. Epidemiological studies do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide. Titanium dioxide has been characterized by IARC as possibly carcinogenic to humans (Group 2B) through inhalation (not ingestion). It has not been characterized as a potential carcinogen by either NTP or OSHA.

Quartz (14808-60-7): This classification is relevant when exposed to Quartz (silicon dioxide) in dust or powder form only, including cured product that is subject to sanding, grinding, cutting, or other surface preparation activities.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Contaminated packaging	:	Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

TSCA list : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Carcinogenicity
Skin corrosion or irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

⚠ **WARNING:** This product can expose you to chemicals including Quartz (SiO2), which is known to the State of California to cause cancer, and benzene, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA P0	:	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
OSHA Z-3	:	USA. Occupational Exposure Limits (OSHA) - Table Z-3 Mineral Dusts
ACGIH / TWA	:	8-hour, time-weighted average
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average
OSHA Z-3 / TWA	:	8-hour time weighted average

Notes to Reader

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 09/15/2021

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SECTION 1. IDENTIFICATION

Product name	:	SikaLastomer®-95
Company name	:	Sika Corporation 201 Polito Avenue Lyndhurst, NJ 07071 USA www.sikausa.com
Telephone	:	(201) 933-8800
Telefax	:	(201) 804-1076
E-mail address	:	ehs@sika-corp.com
Emergency telephone	:	CHEMTREC: 800-424-9300 INTERNATIONAL: 703-527-3887
Recommended use of the chemical and restrictions on use	:	For further information, refer to product data sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Additional Labeling

There are no ingredients with unknown acute toxicity used in a mixture at a concentration >= 1%.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES

General advice	:	No hazards which require special first aid measures.
If inhaled	:	Move to fresh air.

In case of skin contact	:	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water.
In case of eye contact	:	Flush eyes with water as a precaution. Remove contact lenses. Keep eye wide open while rinsing.
If swallowed	:	Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	:	No known significant effects or hazards. No information available.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Environmental precautions	:	Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	:	Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Advice on safe handling	:	For personal protection see section 8. No special handling advice required. Follow standard hygiene measures when handling chemical products.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Store in accordance with local regulations.

Materials to avoid	:	No special restrictions on storage with other products.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures	:	Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection	:	Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hand protection	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Skin and body protection	:	Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Hygiene measures	:	Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Avoid breathing dust.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	solid
Color	:	gray
Odor	:	odorless

Odor Threshold	:	No data available
pH	:	Not applicable
Melting point/range / Freezing point	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	> 399 °F / > 204 °C (Method: closed cup)
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	No data available
Density	:	ca. 1.5 g/cm3 (73 °F / 23 °C)
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	Not applicable
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Volatile organic compounds (VOC) content	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.

Chemical stability	:	The product is chemically stable.
Possibility of hazardous reactions	:	Stable under recommended storage conditions.
Conditions to avoid	:	No data available
Incompatible materials	:	No data available
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC	Not applicable
OSHA	Not applicable
NTP	Not applicable

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Other adverse effects

Product:

Additional ecological information	:	Do not empty into drains; dispose of this material and its container in a safe way.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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SECTION 15. REGULATORY INFORMATION

TSCA list	:	All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop 65 ⚠ **WARNING:** Cancer – www.P65Warnings.ca.gov

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

Notes to Reader

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Revision Date 08/25/2020

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