Arco Construction Inc.
15 Fairfield Place
West Caldwell NJ 07006

Submittal Coversheet

Contractor: Arco Construction Inc.
Address: 15 Fairfield Place
West Caldwell, NJ 07006

Submittal Number: 03
Submittal Date: November 7, 2023

X 1st 2nd 3rd 4th 5th
SUBMISSION (Check One)

PROJECT IDENTIFICATION: RSC Project No. 73.23.001

Name: Bergen County CC, Pitkin Education Center
Science Wing Partial Roof Replacement

Owner: Bergen County Community College
Address: 400 Paramus Road
Paramus, NJ 07417

Architect: RSC Architects, Hackensack, NJ

Specification Section:

No. & Title: Multiple, Non Simon Roofing Products Material
Submittals - Safety Data Sheets

Paragraph:

Generic Name: Foam Adhesive, Coverboard, Insulation, Aluminum

Manufacturer: GAF, Tremco, USG, Petersen

Return Date:

Sub-Contractor:

Supplier: Passaic Metal Corp.

No. of Copies: ONE

Is this a Substitution: NO

Comments:

SUBMITTAL NO.: Submittal Pac -3 **DATE RECEIVED:** 23'11'07
SUBMISSION:

RSC Architects

☐ APPROVED ☐ REJECTED
☐ APPROVED AS NOTED ☒ REVISE AND RESUBMIT

APPROVAL IS ONLY FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION GIVEN IN THE CONTRACT DOCUMENTS. CONTRACTOR IS RESPONSIBLE FOR DIMENSIONS TO BE CONFIRMED AND CORRELATED AT THE JOB SITE; INFORMATION THAT PERTAINS SOLELY TO THE FABRICATION PROCESS OR TO THE MEANS AND METHODS OF CONSTRUCTION; COORDINATION OF THE WORK OF ALL TRADES, AND PERFORMING ALL WORK IN A SAFE AND SATISFACTORY MANNER. THIS APPROVAL DOES NOT MODIFY CONTRACTOR'S OBLIGATION TO COMPLY WITH THE CONTRACT DOCUMENTS.

BY: T. Hennessy **DATE:** 23'11'08

If yes, include Matrix Comparison. If Matrix Comparison has not been included, provide reason why:

Additional Comments or Details:

SAFETY DATA SHEET

Rev. 4, 25 September 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: OlyBond500 Canisters, Part 1

Supplier: OMG, Inc.
153 Bowles Road
Agawam, MA 01001 USA
Phone: (01) 413-789-0252
Fax: (01) 413-786-1453
www.OMGRoofing.com

24-hour Emergency Response Number:
Chemtrec: 800-424-9300

OlyBond500 Roof Insulation Adhesive is a fast-acting, two-component, low-rise polyurethane foam adhesive designed to secure insulation to roof decks.

Product Use(s): One component of a two-component polyurethane system

2. HAZARDS IDENTIFICATION

Classifications: Acute Toxicity, Inhalation: Hazard Category 4
Respiratory Sensitization: Hazard Category 1
Skin Sensitization: Hazard Category 1
Skin Irritation: Hazard Category 2
Eye Irritation: Hazard Category 2B
Specific Target Organ Toxicity, Single Exposure: Hazard Category 3
Specific Target Organ Toxicity, Repeated Exposure: Hazard Category 2
Gases Under Pressure: Compressed Gas
Physical Hazards Not Otherwise Classified: None
Health Hazards Not Otherwise Classified: None

Symbols: Health Hazard
Exclamation Point
Gas Cylinder

Signal Word: Danger

Hazard Statements: May be harmful if inhaled.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause respiratory irritation.
May cause an allergic skin reaction.
Causes eye and skin irritation.
May cause damage to the respiratory system and/or skin through prolonged or repeated exposure.
Contains gas under pressure; may explode if heated.

Precautionary Statements: Do not breathe mist, spray, or vapors.
Use only outdoors or in a well-ventilated area.
In case of inadequate ventilation wear proper respiratory protection.
Wear protective gloves and eye protection.
Wash hands and forearms thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.

IF INHALED: remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms or if you feel unwell, call a doctor or Poison Control Center.

Precautionary Statements: (continued)	**IF ON SKIN:** Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation or rash occurs, get medical advice/attention. **IF IN EYES:** Rinse cautiously with water for at several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention. Get medical advice/attention if you feel unwell. Protect from sunlight. Store in a well-ventilated place. Store locked up in a well-ventilated place. Keep container tightly closed. Dispose of contents/container in accordance with applicable regulations.
Other Hazards	None known

EMERGENCY OVERVIEW

Overexposure to components of this product by inhalation may cause respiratory irritation, asthma-like symptoms, and/or respiratory sensitization.

Skin contact may cause irritation and/or allergy-like symptoms, and eye contact may cause irritation. Avoid skin and eye contact, using proper personal protective equipment as needed. See Section #7 for recommendations on proper handling and work practices, and Section #8 for recommendations on personal protective equipment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percentage	Impurities
4,4'-Methylenediphenyl Diisocyanate	101-68-8	25-50	None known
Diphenylmethane Diisocyanate, Isomers and Homologues	9016-87-9	>50	None known
Trans-1,3,3,3-Tetrafluoroprop-1-ene	29118-24-9	10-25	None known

4. FIRST AID MEASURES

Eyes:	Hold eyes open and flush with lukewarm water for at least 15 minutes. Seek immediate medical assistance.
Skin:	Remove contaminated clothing. Wash affected areas with soap and water for at least five minutes. If irritation persists or a rash occurs, seek medical attention. Launder or dry-clean clothing before reuse.
Ingestion:	DO NOT induce vomiting. If the subject is conscious, wash mouth with water. Seek immediate medical assistance. Do not attempt to give anything by mouth to an unconscious or convulsive person.

Inhalation:	If signs and symptoms of respiratory toxicity are observed, remove subject from area and seek immediate medical attention. Keep the subject warm and at rest. If necessary, administer oxygen or perform artificial respiration if necessary and qualified personnel are available to do so.
Guidance for Physician or Poison Control Center:	Inhalation exposure can irritate the respiratory tract and induce respiratory sensitization. Treatment of acute irritation and bronchial constriction should be done according to symptoms. Eye contact can cause irritation. Skin contact can cause moderate irritation and may elicit an allergic response among susceptible individuals. Treat eye and skin irritation or injury according to symptoms. Extended medical treatment may be necessary for individuals exhibiting respiratory sensitization and/or skin disorders.

5. FIREFIGHTING MEASURES

Extinguishing Media:	Water spray, carbon dioxide, dry chemical or chemical foam. DO NOT use water jet.
Fire and Explosion Hazards:	The container may burst if exposed to elevated temperatures, spilling the contents. Material reacts slowly with water, releasing carbon dioxide which can cause pressure buildup and rupture of closed containers. If present in a fire or explosion, potential decomposition byproducts include carbon monoxide, oxides of nitrogen, isocyanates, hydrogen cyanide, hydrogen fluoride, and carbonyl halides.
Firefighting Instructions:	If fighting a fire in which this product is present, wear a self-contained breathing apparatus with full-facepiece operated in pressure-demand or other positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Methods and Materials:	Absorb spilled material with a sorbent such as sawdust or calcium silicate hydrate. When absorbed, transfer to an impervious container. Neutralize with solution of 8-10% sodium carbonate and 2% liquid detergent in water (10:1 ratio of solution to product). Do not seal container, as CO_2 will be released. Neutralize in a well-ventilated area for at least 48 hours before sealing containers for disposal.
Personal Precautions:	Avoid contact with skin, eyes, and mucous membranes. Wear appropriate personal protective equipment (see Section #8) during cleanup and decontamination. Restrict unauthorized personnel during cleanup and disposal operations.
Environmental Precautions:	Prevent spills from entering sewers or contaminating soil.

7. HANDLING AND STORAGE

Handling Precautions:	Containers should be kept tightly closed to prevent contact with moisture and other chemicals. Do not reuse empty containers for any purpose. When handling the product, avoid contact with eyes, skin,

	and clothing, using protective equipment as needed. Do not use this product around children and secure it away from children.
Work and Hygiene Practices:	To prevent ingestion or contact following use of the product, wash hands and face before eating, drinking, applying cosmetics, or using tobacco. Remove contaminated clothing and protective equipment before entering eating/drinking areas.
Storage Precautions:	Keep containers tightly sealed during storage. Store in a dry, well-ventilated area away from sources of ignition and incompatible materials (see Section #10). Protect from heat and direct sunlight. Recommended temperature for storage is 55-85°F. (12.8-29.4°C.).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

Ingredient	OSHA PEL	ACGIH TLV	Other
4,4'-Methylenediphenyl Diisocyanate	0.02 ppm Ceiling	0.005 ppm	
Diphenylmethane Diisocyanate, Isomers and Homologues	None	None	
Trans-1,3,3,3-Tetrafluoroprop-1-ene	None	None	800 ppm (manufacturer recommended)

Ingredients Biological Limits:

Ingredient	Biological Limit(s)
4,4'-Methylenediphenyl Diisocyanate	No ACGIH BEIs or other biological limits
Diphenylmethane Diisocyanate, Isomers and homologues	No ACGIH BEIs or other biological limits
Trans-1,3,3,3-Tetrafluoroprop-1-ene	No ACGIH BEIs or other biological limits

Engineering Controls:	Use appropriate ventilation (dilution or local exhaust) whenever natural ventilation is restricted or inadequate to maintain concentrations of all components within their applicable standards.
Eye/Face Protection:	Wear eye protection adequate to prevent eye contact with the product. Plastic-frame spectacles with side shields, chemical goggles, or a face shield are recommended.
Skin Protection:	Wear protective gloves and clothing to prevent skin irritation or injury from contact with the product. Glove materials known to be effective against permeation by isocyanates include butyl rubber, nitrile rubber, and polychloroprene.
Respiratory Protection:	If an exposure level to a component exceeds an applicable standard, use a NIOSH-approved respirator of a class and configuration effective for

protection from the component(s) generated. Where exposures exceed the OSHA *Permissible Exposure Limit* (*PEL*), an airline respirator or self-contained breathing apparatus (SCBA) is recommended. Consult OSHA regulations (29CFR1910.134) and/or American National Standard Z88.2 (ANSI, New York, NY 10036, USA) for guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: cream-colored liquid
Odor: aromatic
Odor threshold: not determined
pH: not applicable
Melting point: not determined.
Freezing point: not determined
Boiling point: not determined
Boiling range: not applicable (aerosol)
Flash Point: not applicable (aerosol)
Autoignition Point: not determined
Flammability Class: not applicable (aerosol)

Lower Explosive Limit: not determined
Upper Explosive Limit: not determined
Vapor pressure: <0.00001 mmHg @ 25C (MDI)
Vapor density: not determined
Evaporation Rate: not determined
VOCs (per EPA Method 24): none
Relative density (H_2O): approx. 1.23
Solubility (H_2O): reactive
Oil-water partition coefficient: not determined
Decomposition temperature: not determined
Viscosity: not determined

10. STABILITY AND REACTIVITY

Stability:	Stable
Reactivity:	May react with water and incompatible materials
Hazardous Polymerization:	May occur at temperatures >392°F./200°C.
Risk of Dangerous Reactions:	None reasonably foreseeable
Incompatible Materials:	Water, alcohols, acids, alkalis, and amines
Potential Decomposition Byproducts:	Carbon monoxide, carbon dioxide, nitrogen oxides, isocyanates, hydrogen cyanide, hydrogen fluoride, and carbonyl halides.

11. TOXICOLOGICAL INFORMATION

Ingredients Toxicology Data	LD_{50} Oral	LD_{50} Dermal	LC_{50}
4,4'-Methylenediphenyl Diisocyanate	>10,000 mg/kg (rat)	No data available	2.24 mg/l. for 1 hour (rat)
Diphenylmethane Diisocyanate, Isomers and Homologues	No data available	No data available	No data available
Trans-1,3,3,3-Tetrafluoroprop-1-ene	No data available	No data available	>207000 ppm/4h (rat)

Primary Route(s) of Entry:	Inhalation; ingestion
Eye Hazards:	This product may cause eye irritation.
Skin Hazards:	This product may cause mild to moderate skin irritation and has the potential to cause skin sensitization among susceptible individuals.

Ingestion Hazards:	The product is nontoxic by ingestion, but ingestion may cause nausea, vomiting, and/or gastrointestinal irritation.
Inhalation Hazards:	Inhalation of toxicologically-significant quantities of ingredients is unlikely when the product is used in a well-ventilated area and in accordance with instructions.
Symptoms Related to Overexposure:	Inhalation overexposure to isocyanates may cause respiratory irritation, breathing difficulties, and asthma-like symptoms.
Delayed Effects from Long Term Overexposure:	Long-term inhalation overexposure to this product may result in respiratory damage, which may be irreversible.
Carcinogenicity:	A single inhalation study exposing rats to aerosolized polymeric 4,4'-Methylenediphenyl Diisocyanate identified a single malignant pulmonary tumor among sixty animals exposed at the highest exposure level. Observations of pulmonary fibrosis and other pathological anomalies in the test animals precluded definitive determination as to the cause(s) of the tumor. Epidemiological studies of humans occupationally exposed to the isocyanates in this product have found no strong association or consistent pattern with respect to carcinogenicity.
Germ Cell Mutagenicity:	No ingredients have been determined to be germ cell mutagens.
Reproductive Toxicity:	No ingredients have been determined to be damaging to fertility or to the unborn child.
Acute Toxicity Estimates:	LD_{50} (oral): >10,000 mg/kg LD_{50} (dermal): >9,400 mg/kg LC_{50}: 2.24 mg/L/1 hr as aerosol
Interactive Effects of Components:	No data available

12. ECOLOGICAL INFORMATION

4,4'-Methylene-diphenyl Diisocyanate	Aquatic Toxicity to Fish: LC_{50} >1,000 mg/l. for 96 h. (zebra fish) Aquatic Toxicity to Invertebrates: EC_{50} >1,000 mg/l. for 24 h. (daphnia) Aquatic Toxicity to Plants: EC_{50} >1,640 mg/l. for 72 h. (algae) Aquatic Toxicity to Microorganisms: EC_{50} >100 mg/l. for 3 h. (bacteria) Toxicity to Terrestrial Organisms: EC_{No} = 1,000 mg/kg for 14 d. (worms) No data available for Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.
Diphenylmethane Diisocyanate, Isomers and homologues	No data available for Aquatic Toxicity to Fish, Invertebrates, Plants, or Microorganisms, Toxicity to Terrestrial Organisms, Persistence and Degradability, Bioaccumulation Potential, or Mobility in Soil.
Trans-1,3,3,3-Tetrafluoroprop-1-ene	Aquatic Toxicity to Fish: LC_{50} >117 mg/l. for 96 h. (carp) Aquatic Toxicity to Invertebrates: EC_{50} >160 mg/l. for 48 h. (daphnia) Aquatic Toxicity to Plants: EC_{50} >170 mg/l. for 72 h. (algae)

	Not readily biodegradable. No bioaccumulation is expected. No data available for Aquatic Toxicity to Microorganisms, Toxicity to Terrestrial Organisms, or Mobility in Soil.
Ozone Depletion Potential:	This product neither contains nor is manufactured with any ingredients known to deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Empty containers should be decontaminated prior to disposal. Consult applicable Federal, State/Provincial, and local regulations.

14. TRANSPORTATION INFORMATION

Proper Shipping Name: Chemical Under Pressure, n.o.s.
(trans-1,3,3,3-Tetrafluoroprop-1-ene, Nitrogen)
Identification Number: UN3500
Hazard Class: 2.2
Packing Group: not applicable

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA Information:	All ingredients of this product are listed in the TSCA Registry.
SARA Hazard Classes:	Refer to Section 2 for the OSHA Hazard Classification
EPCRA Section 313 Notification:	This product contains these ingredients in concentrations ≥1% (for carcinogens ≥0.1%) regulated under Section 313 of the *Emergency Planning and Community Right-To-Know Act* of 1986 or 40 CFR 372: 1. 4,4'-Methylenediphenyl Diisocyanate (CASRN 101-68-8) 2. Diphenylmethane Diisocyanate, Isomers and Homologues (CASRN 9016-87-9)
CERCLA Information:	Under requirements of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), 4,4'-Methylene Bisphenyl Isocyanate (CASRN 101-68-8) has a *Reportable Quantity* of 5,000 lbs. Any spill or release above this *RQ* must be reported to the National Response Center (800-424-8802).

Canadian Regulatory Information

All ingredients in this product are listed in the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).

This product has been classified in accordance with Canada's *Hazardous Products Regulations* (SOR/DORS/2015-15).

16. OTHER INFORMATION

	Health	Flammability	Physical Hazard	PPE
Hazardous Materials Information System (HMIS III) Ratings (Legend):	2* (moderate hazard, "*" indicating potential for chronic effects)	0 (minimal hazard)	1 (slight hazard)	See Note

Note regarding PPE: OMG, Inc. recommends use of protective eyewear and skin protection (Personal Protection Index "B") as standard PPE for the anticipated conditions of use of this product. However, HMIS recommends that its ratings be used only in conjunction with a fully implemented HMIS program, and that specific PPE codes should be created by the user, who is familiar with the actual conditions under which the product is used. We cannot anticipate every condition of the product's use, and it is the user's responsibility to evaluate the hazards pertinent to its specific operations, and to determine the specific PPE required.

	Health	Flammability	Reactivity
National Fire Protection Association (NFPA) Ratings:	2	0	1

Revision Information: Publication Date: 23 November 2020
Date of Prior SDS: 24 January 2018
Section(s) Revised: 3, 5, 8, 9, 10, 11, 12, 14

DISCLAIMER

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SAFETY DATA SHEET

Rev. 4, 25 September 2023

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: OlyBond500 Canisters Part 2

Supplier: OMG, Inc.
153 Bowles Road
Agawam, MA 01001 USA
Phone: (01) 413-789-0252
Fax: (01) 413-786-1453
www.OMGRoofing.com

24-hour Emergency Response Number:
Chemtrec: 800-424-9300

Product Use(s): One component of a two-component polyurethane system

2. HAZARDS IDENTIFICATION

Classifications: Acute Oral Toxicity: Hazard Category 4
Gases Under Pressure: Compressed Gas
Physical Hazards Not Otherwise Classified: None
Health Hazards Not Otherwise Classified: None

Symbols: Exclamation Point
Gas Cylinder

Signal Word: Warning

Hazard Statements: Harmful if swallowed.
Contains gas under pressure; may explode if heated.

Precautionary Statements: Wash hands and forearms thoroughly after handling.
Do not eat, drink or smoke when using this product.
IF SWALLOWED: Call a Poison Center or doctor if you feel unwell. Rinse mouth.
Protect from sunlight. Store in a well-ventilated place.
Dispose of contents/container in accordance with applicable regulations.

EMERGENCY OVERVIEW

Harmful if swallowed. There are no known serious health effects from inhalation or skin contact. See Section #7 for recommendations on proper handling and work practices, and Section #8 for recommendations on personal protective equipment.

This product is formulated to be mixed with another component (OlyBond Canisters Part 1) that, if handled improperly, may cause potentially serious health effects such as respiratory irritation, asthma-like symptoms, and/or respiratory sensitization. Do not handle or mix the two components together until you have read and understood that information in the *Safety Data Sheets* for both components.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percentage	Impurities
Diethylene Glycol	111-46-6	1-10	None known
Polypropylene Glycol	25322-69-4	30-40	None known

Trans-1,3,3,3-Tetrafluoroprop-1-ene	29118-24-9	10-15	None known

4. FIRST AID MEASURES

Eyes:	Hold eyes open and flush with lukewarm water for at least 15 minutes. Seek immediate medical assistance.
Skin:	Remove contaminated clothing. Wash affected areas with soap and water for at least five minutes. If irritation occurs or persists, seek medical attention. Launder or dry-clean clothing before reuse.
Ingestion:	DO NOT induce vomiting. If the subject is conscious, wash mouth and give 2 or more cups of milk or water. Seek immediate medical assistance. Do not attempt to give anything by mouth to an unconscious or convulsive person.
Inhalation:	If signs and symptoms of respiratory toxicity are observed, remove subject from area and seek immediate medical attention. Keep the subject warm and at rest. If necessary, administer oxygen or perform artificial respiration if necessary and qualified personnel are available to do so.
Guidance for Physician or Poison Control Center:	None of the components of this product are acutely toxic by inhalation. Harmful if swallowed. Eye contact can cause mild irritation. Skin contact can cause mild irritation. Ingestion is unlikely to occur in industrial use, but if ingestion occurs it may cause nausea, vomiting, and gastrointestinal irritation. Chronic ingestion can cause kidney injury.

5. FIREFIGHTING MEASURES

Extinguishing Media:	Water spray, carbon dioxide, dry chemical or chemical foam. DO NOT use water jet.
Fire and Explosion Hazards:	The container may burst if exposed to elevated temperatures, spilling the contents. This product may ignite if exposed to sources of ignition at temperatures above its flash point. If present in a fire or explosion, potential thermal decomposition byproducts include carbon monoxide, hydrogen fluoride, carbonyl halides, smoke, and irritant decomposition byproducts.
Firefighting Instructions:	If fighting a fire in which this product is present, wear a self-contained breathing apparatus with full-facepiece operated in pressure-demand or other positive pressure mode.

6. ACCIDENTAL RELEASE MEASURES

Methods and Materials:	Absorb spilled material with a sorbent such as sawdust, vermiculite, or calcium silicate hydrate. When absorbed, transfer to an impervious container.
Personal Precautions:	Avoid contact with skin, eyes, and mucous membranes. Wear appropriate personal protective equipment (see Section #8) during cleanup and decontamination.

Environmental Precautions: Prevent spills from entering sewers or contaminating soil.

7. HANDLING AND STORAGE

Handling Precautions:	Containers should be kept tightly closed to prevent contact with moisture and other chemicals. Do not reuse empty containers for any purpose. When handling the product, avoid contact with eyes, skin, and clothing, using protective equipment as needed. Do not use this product around children and secure it away from children.
Work and Hygiene Practices:	To prevent ingestion or contact following use of the product, wash hands and face before eating, drinking, applying cosmetics, or using tobacco. Remove contaminated clothing and protective equipment before entering eating/drinking areas.
Storage Precautions:	Store containers tightly sealed in a dry, well-ventilated, area away from incompatible materials (see Section #10). Recommended temperature range for storage is 55-85°F. (12.8-29.4°C.).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits

Ingredient	OSHA PEL	ACGIH TLV	Other
Diethylene Glycol	None	None	10 mg/m3 AIHA WEEL
Polypropylene Glycol	None	None	
Trans-1,3,3,3-Tetrafluoroprop-1-ene	None	None	800 ppm (manufacturer recommended)

Ingredients Biological Limits:

Ingredient	**Biological Limit(s)**
Diethylene Glycol	No ACGIH BEIs or other biological limits
Polypropylene Glycol	No ACGIH BEIs or other biological limits
Trans-1,3,3,3-Tetrafluoroprop-1-ene	No ACGIH BEIs or other biological limits

Engineering Controls:	Use appropriate ventilation (dilution or local exhaust) whenever this product is used in conjunction with OlyBond Canisters, Part 1 in conditions where natural ventilation is restricted.
Eye/Face Protection:	Wear eye protection adequate to prevent eye contact with the product. Plastic-frame spectacles with side shields, chemical goggles, or a face shield are recommended.
Skin Protection:	Wear protective gloves and clothing to prevent skin irritation or injury from contact with the product. Glove materials known to be effective against permeation by this product include butyl rubber, nitrile rubber, and polyvinyl

alcohol.

Respiratory Protection:	If an exposure level to a component exceeds an applicable standard, use a NIOSH-approved respirator of a class and configuration effective for protection from the component(s) generated. Consult OSHA regulations (29CFR1910.134) and/or American National Standard Z88.2 (ANSI, New York, NY 10036, USA) for guidance.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: red viscous liquid
Odor: mildly sweet
Odor threshold: not determined
pH: not determined
Melting point: not determined
Freezing point: not determined
Boiling point: not determined
Boiling range: not applicable (aerosol)
Flash Point: not applicable (aerosol)
Autoignition Point: not determined
Flammability Class: not applicable (aerosol)
Lower Explosive Limit: not determined
Upper Explosive Limit: not determined
Vapor pressure: <10 mmHg @ 20C (Polyol)
Vapor density: not determined
Evaporation Rate: not determined
VOCs: not determined
Relative density (H_2O): approx. 1.03
Solubility (H_2O): partial
Oil-water partition coefficient: not determined
Decomposition temperature: not determined
Viscosity: not determined

10. STABILITY AND REACTIVITY

Stability:	Stable
Reactivity:	Polymerizes with isocyanate-containing substances
Hazardous Polymerization:	Will not occur
Risk of Dangerous Reactions:	None reasonably foreseeable
Incompatible Materials:	Oxidizing agents
Potential Decomposition Byproducts:	Carbon monoxide, carbon dioxide, hydrogen fluoride, carbonyl halides, smoke, and irritant decomposition byproducts

11. TOXICOLOGICAL INFORMATION

Ingredients Toxicology Data	LD_{50} Oral	LD_{50} Dermal	LC_{50}
Diethylene Glycol	14,850 mg/kg (rat)	11,890 mg/kg (hamster)	No data available
Polypropylene Glycol	500-2000 mg/kg (rat)	>10,000 mg/kg (rabbit)	No data available
Trans-1,3,3,3-Tetrafluoroprop-1-ene	No data available	No data available	>207000 ppm/4h (rat)

Primary Route(s) of Entry: Inhalation; ingestion

Eye Hazards:	This product may cause mild eye irritation.
Skin Hazards:	This product may cause mild skin irritation. Irritation may be more pronounced on abraded skin.

Ingestion Hazards:	Ingestion may cause nausea, vomiting, and/or gastrointestinal irritation.
Inhalation Hazards:	Inhalation of toxicologically-significant quantities of ingredients is unlikely when the product is used in a well-ventilated area and in accordance with instructions.
Symptoms Related to Overexposure:	Inhalation overexposure may cause respiratory irritation.
Delayed Effects from Long Term Overexposure:	Long-term ingestion may damage the kidneys and the gastrointestinal system.
Carcinogenicity:	No ingredients are classified as potential or confirmed human carcinogens by OSHA, NTP, or IARC.
Germ Cell Mutagenicity:	No ingredients have been determined to be germ cell mutagens.
Reproductive Toxicity:	No ingredients have been determined to be damaging to fertility or to the unborn child.
Acute Toxicity Estimates:	LD_{50} (oral): 1124 mg/kg LD_{50} (dermal): >10,000 mg/kg LC_{50}: no data available
Interactive Effects of Components:	No data available

12. ECOLOGICAL INFORMATION

Diethylene Glycol	Aquatic Toxicity to Fish: LC_{50} = >100 mg/l. for 96 h. (fathead minnows) Aquatic Toxicity to Invertebrates: EC_{50} = >10,000 mg/l. for 48 h. (daphnia) Readily biodegradable.
Polypropylene Glycol	Aquatic Toxicity to Fish: LC_{50} = >100 mg/l. for 96 h. (bluegill sunfish) Aquatic Toxicity to Invertebrates: EC_{50} = >100 mg/l. for 48 h. (daphnia) Not readily biodegradable
Trans-1,3,3,3-Tetrafluoroprop-1-ene	Aquatic Toxicity to Fish: LC_{50} >117 mg/l. for 96 h. (carp) Aquatic Toxicity to Invertebrates: EC_{50} >160 mg/l. for 48 h. (daphnia) Aquatic Toxicity to Plants: EC_{50} >170 mg/l. for 72 h. (algae) Not readily biodegradable. No bioaccumulation is expected. No data available for Aquatic Toxicity to Microorganisms, Toxicity to Terrestrial Organisms, or Mobility in Soil.
Ozone Depletion Potential:	This product neither contains nor is manufactured with any ingredients known to deplete the ozone layer.

13. DISPOSAL CONSIDERATIONS

Do not discharge waste product into sanitary or storm sewers or allow it to contaminate soil. Empty containers should be decontaminated prior to disposal. Consult applicable Federal, State/Provincial, and local regulations.

14. TRANSPORTATION INFORMATION

Proper Shipping Name: Chemical Under Pressure, n.o.s.
(trans-1,3,3,3-Tetrafluoroprop-1-ene, Nitrogen)
Identification Number: UN3500
Hazard Class: 2.2
Packing Group: not applicable

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA Information:	All ingredients of this product are listed in the TSCA Registry.
SARA Hazard Classes:	Refer to Section 2 for the OSHA Hazard Classification
EPCRA Section 313 Notification:	This product contains no ingredients in concentrations ≥1% (≥0.1% for carcinogens) regulated under Section 313 of the *Emergency Planning and Community Right-To-Know Act* of 1986 or 40 CFR 372.

Canadian Regulatory Information

All ingredients in this product are listed in the Domestic Substances List (DSL) or the Nondomestic Substances List (NDSL).

This product has been classified in accordance with Canada's *Hazardous Products Regulations* (SOR/DORS/2015-15).

16. OTHER INFORMATION

	Health	Flammability	Physical Hazard	PPE
Hazardous Materials Information System (HMIS III) Ratings (Legend):	1 (slight hazard)	1 (slight hazard)	0 (minimal hazard)	See Note

Note regarding PPE: OMG, Inc. recommends use of protective eyewear and skin protection (Personal Protection Index "B") as standard PPE for the anticipated conditions of use of this product. However, HMIS recommends that its ratings be used only in conjunction with a fully implemented HMIS program, and that specific PPE codes should be created by the user, who is familiar with the actual conditions under which the product is used. We cannot anticipate every condition of the product's use, and it is the user's responsibility to evaluate the hazards pertinent to its specific operations, and to determine the specific PPE required.

16. OTHER INFORMATION (continued)

	Health	Flammability	Reactivity
National Fire Protection Association (NFPA) Ratings:	1	1	0

Revision Information: Publication Date: 23 November 2020
Date of Prior SDS: 11 September 2020
Section(s) Revised: 3, 5, 8, 9, 10, 11, 12, 14

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SAFETY DATA SHEET

1. Identification

Aluminum coils for flashing. Confirm gauge.

Product identifier **COATED COIL AND SHEET**

Other means of identification

SDS number 1073

Version # 06

Revision date June 10, 2015.

Other means of identification

Synonyms Aluminum alloys: * 0359, 0437, 1100, 3003, 3004, 3005, 3105, 5005, 5042, 5050, 5052, 5182, 5352, 5754, 8006

Recommended use Various fabricated aluminum parts and products

Recommended Restrictions None known.

Recommended restrictions For industrial use only.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

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Emergency Information CHEMTREC: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken); Arconic: +1-412-553-4001 (24 Hour Emergency Telephone, only English spoken)

Website For a current Safety Data Sheet, refer to Arconic websites: www.arconic.com or internally at my.arconic.com EHS Community

2. Hazard(s) identification

Classification

The mixture does not meet the criteria for classification.

Potential health effects

The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by a qualified individual. Additional health information can be found in Section 11.
The health effects listed below are not likely to occur unless processing of this product generates dusts or fumes.

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

OSHA defined hazards Combustible dust

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement May form combustible dust concentrations in air.

Precautionary statement

Prevention	Wash thoroughly after handling.
Response	Wash with plenty of soap and water.
Storage	Keep dry.
Disposal	Reuse or recycle material whenever possible.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information The mixture does not meet the criteria for classification.

Specific hazards Non-combustible as supplied. Small chips, fine turnings, and dust from processing may be readily ignitable.

Explosion/fire hazards may be present when (See Sections 5, 7 and 10 for additional information):
• Dust or fines are dispersed in air.
• Chips, dust or fines are in contact with water.
• Dust and fines are in contact with certain metal oxides (e.g., rust, copper oxide).
• Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide).

Dust and fume from processing: Can cause irritation of the eyes, skin and upper respiratory tract. Combustion of the coatings can generate toxic and irritating gases.

3. Composition/information on ingredients

Composition comments Complete composition is provided below and may include some components classified as non-hazardous.

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Aluminum		7429-90-5	>94
Magnesium		7439-95-4	<5
Silicon		7440-21-3	<2
Iron		7439-89-6	<2
Manganese		7439-96-5	<1.5
Chromium		7440-47-3	<0.35
Coatings†		Not Applicable	<10
Strontium chromate‡		7789-06-2	≤0.05

Additional Information † Coatings include: vinyl, epoxy, polyester, siliconized polyester, acrylic, fluorocarbons, polyurethane, petrolatum, chromium conversion and titanium conversion.
‡ - Backers 1BHL5626, 1BHY5137, 45D43C and 45Y58 only
Additional compounds which may be formed during processing are listed in Section 8.

4. First-aid measures

Eye contact Dust and fumes from processing: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

Skin contact Dust and fumes from processing: Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

Inhalation Dust and fumes from processing: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.

Ingestion Dust and fumes from processing: If swallowed, dilute by drinking water. Recommend quantities up to 30 mL (~1 oz.) in children and 250 mL (~9 oz.) in adults. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do NOT induce vomiting. Consult a physician.

Most important symptoms/effects, acute and delayed	Dust and fumes from processing: Can cause irritation of the upper respiratory tract. Additional health effects from elevated temperature processing (e.g., welding, melting): Dust and fumes from processing: Can cause severe irritation of the respiratory tract. Acute overexposure: Can cause the accumulation of fluid in the lungs (pulmonary edema). Chronic overexposure: Can cause scarring of the lungs (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease, reproductive harm in males and lung cancer. Contact with residual oil/oil coating: Prolonged skin contact may cause skin irritation and/or dermatitis. See Section 11 of the SDS for additional information on health hazards.
Medical conditions aggravated by exposure	Dust and fume from processing: Asthma, chronic lung disease, and skin rashes.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Provide general supportive measures and treat symptomatically.
General information	No specific first aid measures noted.

5. Fire-fighting measures

Suitable extinguishing media	Use Class D extinguishing agents on fines, dust or molten metal. Use coarse water spray on chips and turnings.
Unsuitable extinguishing media	DO NOT USE halogenated extinguishing agents on small chips/fines. DO NOT USE water in fighting fires around molten metal. These fire extinguishing agents will react with the burning material.
Specific hazards arising from the chemical	May be a potential hazard under the following conditions: • Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. • Chips, fines and dust in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces. • Dust and fines in contact with certain metal oxides (e.g., rust, copper oxide). A thermite reaction, with considerable heat generation, can be initiated by a weak ignition source. • Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide). Moisture entrapped by molten metal can be explosive. Contact of molten aluminum with certain metal oxides can initiate a thermite reaction. Finely divided metals (e.g., powders or wire) may have enough surface oxide to produce thermite reactions/explosions.
Special protective equipment and precautions for firefighters	Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.
Fire fighting equipment/instructions	No unusual fire or explosion hazards noted. Use standard fire fighting procedures and consider the hazards of other involved materials.
General fire hazards	This product does not present fire or explosion hazards as shipped. Small chips, fine turnings, and dust from processing may be readily ignitable.
Explosion data	
Sensitivity to mechanical impact	None known.
Sensitivity to static discharge	Take precautionary measures against static discharges when there is a risk of dust explosion.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid generating dust. Avoid contact with sharp edges or heated metal. Molten, heated and cold aluminum look alike; do not touch unless you know it is cold. Use personal protection recommended in Section 8 of the SDS.
Personal precautions, protective equipment and emergency procedures	
For emergency responders	Avoid generating dust. Avoid contact with sharp edges or heated metal. Molten, heated and cold aluminum look alike; do not touch unless you know it is cold. Use personal protection recommended in Section 8 of the SDS.
Evacuation procedures	Molten metal: Keep unnecessary personnel away.
Methods and materials for containment and cleaning up	Collect scrap for recycling. If molten: Use dry sand to contain the flow of material. All tooling (e.g., shovels or hand tools) and containers which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Allow the spill to cool before remelting as scrap.
Environmental precautions	No special environmental precautions required.

7. Handling and storage

Handling

Avoid generating dust. Avoid contact with sharp edges or heated metal. Hot and cold aluminum are not visually different. Hot aluminum does not necessarily glow red. Use personal protection recommended in Section 8 of the SDS.

Storage

Keep material dry.

Requirements for Processes Which Generate Dusts or Fines

If processing of this product generates dust or if extremely fine particulate is generated, obtain and follow the safety procedures and equipment guides contained in Aluminum Association Bulletin F-1 and National Fire Protection Association (NFPA) brochures listed in Section 16.

Use non-sparking handling equipment, tools and natural bristle brush. Cover and reseal partially empty containers. Provide grounding and bonding where necessary to prevent accumulation of static charges during metal dust handling and transfer operations (See Section 15).

Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used, unless specifically approved for use with flammable/explosive dusts. Dust collection systems must be dedicated to aluminum dust only and should be clearly labeled as such. Do not co-mingle fines of aluminum with fines of iron, iron oxide (rust) or other metal oxides.

Do not allow chips, fines or dust to contact water, particularly in enclosed areas.

Avoid all ignition sources. Good housekeeping practices must be maintained. Do not use compressed air to remove settled material from floors, beams or equipment.

Requirements for Remelting of Scrap Material or Ingot

Molten metal and water can be an explosive combination. The risk is greatest when there is sufficient molten metal to entrap or seal off the water. Water and other forms of contamination on or contained in scrap or remelt ingot are known to have caused explosions in melting operations. While the products may have minimal surface roughness and internal voids, there remains the possibility of moisture contamination or entrapment. If confined, even a few drops of water can lead to violent explosions.

All tooling, containers, molds and ladles which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Any surfaces that may contact molten metal (e.g., concrete) should be specially coated.

Drops of molten metal in water (e.g. from plasma arc cutting), while not normally an explosion hazard, can generate enough flammable hydrogen gas to present an explosion hazard. Vigorous circulation of the water and removal of the particles minimize the hazards.

During melting operations, the following minimum guidelines should be observed:
• Inspect all materials prior to furnace charging and completely remove surface contamination such as water, ice, snow, deposits of grease and oil or other surface contamination resulting from weather exposure, shipment, or storage.
• Store materials in dry, heated areas with any cracks or cavities pointed downwards.
• Preheat and dry large items adequately before charging into a furnace containing molten metal. This is typically done by use of a drying oven or homogenizing furnace. The drying cycle should bring the metal temperature of the coldest item of the batch to 400°F (200°C) and then hold at that temperature for 6 hours.

Thermite explosions have been reported when aluminum alloys were melted in furnaces used for alloying with lead, bismuth or other metals with low melting temperatures. These metals, when added as high purity ingots, can seep through cracks in furnace liners and become oxidized. During subsequent melts in the furnace, molten aluminum can contact these metal oxides resulting in a thermite explosion.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	5 mg/m3	Respirable fraction
		15 mg/m3	Total dust
Chromium (CAS 7440-47-3)	TWA	1 mg/m3	
Manganese (CAS 7439-96-5)	Ceiling	5 mg/m3	Fume
Silicon (CAS 7440-21-3)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust

U.S. - OSHA

Compounds Formed During Processing	Type	Value	Form
Aluminum oxide (non-fibrous) (CAS 1344-28-1)	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

Decomposition	Type	Value	Form
Hydrogen fluoride (CAS 7664-39-3)	TWA	3 ppm	(as F)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Components	Type	Value
Strontium chromate‡ (CAS 7789-06-2)	TWA	0.005 mg/m3

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Compounds Formed During Processing	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	PEL	15 mg/m3	Total particulate.

Decomposition	Type	Value
Hydrogen chloride (CAS 7647-01-0)	Ceiling	7 mg/m3
		5 ppm

ACGIH

Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA (inhalable fraction)	0.2 mg/m3	(inhalable fraction)
	TWA (respirable fraction)	0.02 mg/m3	(respirable fraction)

Compounds Formed During Processing	Type	Value	Form
Aluminum oxide (non-fibrous) (CAS 1344-28-1)	TWA	1 mg/m3	Respirable fraction, as Al

US ACGIH Threshold Limit Values: Ceiling Limit Value: mg/m3 & ppm

Decomposition	Type	Value
Hydrogen chloride (CAS 7647-01-0)	Ceiling	2 ppm

US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.
Chromium (CAS 7440-47-3)	TWA	0.5 mg/m3	
Manganese (CAS 7439-96-5)	TWA	0.1 mg/m3	Inhalable fraction.
		0.02 mg/m3	Respirable fraction.
Strontium chromate‡ (CAS 7789-06-2)	TWA	0.0005 mg/m3	

Compounds Formed During Processing	Type	Value	Form
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.

Arconic

Components	Type	Value	Form
Aluminum (CAS 7429-90-5)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Total dust

Arconic Components	Type	Value	Form
Manganese (CAS 7439-96-5)	TWA	0.05 mg/m3	Total dust.
		0.02 mg/m3	Respirable fraction.
Strontium chromate‡ (CAS 7789-06-2)	TWA	0.25 ug/m3	(as Hexavalent Cr)

Compounds Formed During Processing	Type	Value	Form
Aluminum oxide (non-fibrous) (CAS 1344-28-1)	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.

Decomposition	Type	Value	Form
Hydrogen fluoride (CAS 7664-39-3)	STEL	1.64 mg/m3	Peak (as F) (Skin)
		2 ppm	Peak (as F) (Skin)
	TWA	0.5 mg/m3	(as F) (Skin)

Exposure guidelines

US ACGIH Threshold Limit Values: Skin designation

Hydrogen fluoride (CAS 7664-39-3) Can be absorbed through the skin.

US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants

HYDROGEN FLUORIDE, AS F (CAS 7664-39-3) Can be absorbed through the skin.

General Personnel who handle and work with molten metal should utilize primary protective clothing like polycarbonate face shields, fire resistant tapper's jackets, neck shades (snoods), leggings, spats and similar equipment to prevent burn injuries. In addition to primary protection, secondary or day-to-day work clothing that is fire resistant and sheds metal splash is recommended for use with molten metal. Synthetic materials should never be worn even as secondary clothing (undergarments).

Appropriate engineering controls Dust and fumes from processing: Use with adequate explosion-proof ventilation to meet the limits listed in Section 8.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields. Wear a face shield when working with molten material.

Skin protection

Hand protection Wear impervious gloves to avoid repeated or prolonged skin contact with residual oils and to avoid any skin injury. The need for personal protective equipment (gloves) should be based upon a hazard assessment and recommendations from health / safety professionals. The most suitable glove must be chosen in consultation with the gloves supplier, who can inform about the breakthrough time of the glove material.

Other The need for personal protective equipment should be based upon a hazard assessment and recommendations from health / safety professionals.

Respiratory protection Dust and fumes from processing: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8. Suggested respiratory protection: N95, Acid gas cartridge for Hydrogen fluoride gas and Hydrogen chloride.

Thermal hazards Contact with molten material can cause thermal burns. Hot aluminum does not necessarily glow red. When material is heated, wear gloves to protect against thermal burns. Flame retardant protective clothing is recommended.

General hygiene considerations Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

Control parameters Follow standard monitoring procedures.

Environmental exposure controls No special environmental precautions required.

9. Physical and chemical properties

Form Solid. Coated coil or sheet.

Color Various colors.

Odor Odorless

Odor threshold Not applicable

pH	Not applicable
Density	2.63 - 3.12 g/cm3
Melting point/freezing point	900 - 1200 °F (482.22 - 648.89 °C) / Not applicable
Initial boiling point and boiling range	Not applicable
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - upper (%)	Not applicable
Flammability limit - lower (%)	Not applicable
Explosive properties	Dust accumulation from this product may present an explosion hazard in the presence of an ignition source.
Dust explosion properties	
St class	Very strong explosion.
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	Not determined
Solubility(ies)	Insoluble
Partition coefficient (n-octanol/water)	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not applicable
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions of use, storage, and transportation as shipped.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

Conditions to avoid

Chips, fines, dust and molten metal are considerably more reactive with the following:
• Heat: Oxidizes at a rate dependent upon temperature and particle size.
• Water: Slowly generates flammable/explosive hydrogen gas and heat. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). Molten metal can react violently/explosively with water or moisture, particularly when the water is entrapped.

Explosions can occur with coils of foil that have been submerged or partially submerged in water for an extended period of time. Water can penetrate between the layers of foil, react with the aluminum surface and generate heat and hydrogen gas. When the coils are removed from the cooling effects of the water, rapid temperature increases can occur causing steam explosions which result in the rupture of the coils and discharge of debris.

Coils of foil may be a potential hazard under the following conditions:
• Coil has been annealed (annealing removes residual oil that could prevent penetration of water
) • Foil is very thin gauge (5-9 µm thickness which increases surface area)
• Coil has been immersed for an extended period of time (several hours or more)
• Wetted coil has recently been removed from the cooling effects of the water

In such situations, the coils should be isolated (30 meters from any personnel) for at least 72 hours as soon as possible after removal from the water. Coils making crackling sounds or emitting steam should not be approached or transported in commerce. Wetted coils should not be charged into a furnace for remelting until completely dry.
Grinding, sanding, buffing and polishing operations may generate potentially explosive aluminum dust, fines or particulate that must not be co-mingled with dust, fines or particulate of steel, iron, iron oxide (rust) or other metal oxides. Vacuum and dust collection systems utilized for processing aluminum must be placarded as follows:

WARNING – Aluminum Metal Only – Fire or Explosion Can Result with Other Metals.

Incompatible materials

Chips, fines, dust and molten metal are considerably more reactive with the following:
• Strong oxidizers: Violent reaction with considerable heat generation. Can react explosively with nitrates (e.g., ammonium nitrate and fertilizers containing nitrate) when heated or molten.
• Acids and alkalis: Reacts to generate flammable/explosive hydrogen gas. Generation rate is greatly increased with smaller particles (e.g., fines and dusts).
• Halogenated compounds: Many halogenated hydrocarbons, including halogenated fire extinguishing agents, can react violently with finely divided or molten aluminum.
• Iron oxide (rust) and other metal oxides (e.g., copper and lead oxides): A violent thermite reaction generating considerable heat can occur. Reaction with aluminum fines and dusts requires only very weak ignition sources for initiation. Molten aluminum can react violently with iron oxide without external ignition source.
• Iron powder and water: Explosive reaction forming hydrogen gas when heated above 1470°F (800°C).

Hazardous decomposition products

Combustion of the coatings can generate carbon monoxide, carbon dioxide, hydrogen chloride, hydrogen fluoride, etc..

11. Toxicological information

Health effects associated with ingredients

Aluminum dust/fines and fumes: Low health risk by inhalation. Generally considered to be biologically inert (milling, cutting, grinding).

Silicon (inert dusts): Chronic overexposures: Can cause chronic bronchitis and narrowing of airways.

Chromium dust and fumes: Can cause irritation of eye, skin and respiratory tract. Metallic chromium and trivalent chromium: Not classifiable as to their carcinogenicity to humans by IARC.

Strontium chromate [Chromium (VI) compounds]: Can cause irritation of eye, skin and respiratory tract. Skin contact: Can cause irritant dermatitis, allergic reactions and skin ulcers. Chronic overexposures: Can cause perforation of the nasal septum, respiratory sensitization, asthma, fluid in the lungs (pulmonary edema), lung damage, kidney damage, lung cancer, nasal cancer and cancer of the gastrointestinal tract. IARC/NTP: Listed as "known to be a human carcinogen" by the NTP. Listed as carcinogenic to humans by IARC (Group 1).

Health effects associated with compounds formed during processing

The following could be expected if welded, remelted or otherwise processed at elevated temperatures:

Alumina (aluminum oxide): Low health risk by inhalation. Generally considered to be biologically inert.

Magnesium oxide fumes: Can cause irritation of the eyes and respiratory tract. Acute overexposures: Can cause metal fume fever (nausea, fever, chills, shortness of breath and malaise).

Manganese oxide fumes: Can cause irritation of the eyes, skin, and respiratory tract. Acute overexposures: Can cause metal fume fever (nausea, fever, chills, shortness of breath and malaise).

Manganese compounds: Chronic overexposures: Can cause inflammation of the lung tissues, scarring of the lungs (pulmonary fibrosis), central nervous system damage, Secondary Parkinson's Disease and reproductive harm in males.

Combustion of the coatings can generate hydrogen chloride.

Hydrogen chloride gas: Can cause severe irritation and corrosive burns of eyes, skin and upper respiratory tract. Acute overexposures: Can cause the accumulation of fluid in the lungs (pulmonary edema).

Hydrogen fluoride: Can cause severe irritation of the eyes, mucous membranes, skin and respiratory tract. Acute overexposures: Can cause cough, shock, the accumulation of fluid in the lungs (pulmonary edema) and death. Effects can be delayed up to 24 hours.

Information on likely routes of exposure

Eye contact	Dust and fumes from processing: Can cause irritation.
Skin contact	Dust and fumes from processing: Can cause irritation.
Inhalation	Dust and fumes from processing: Can cause irritation of the upper respiratory tract. Chronic overexposures: Can cause scarring of the lungs (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease, reproductive harm in males and lung cancer. Additional health effects from elevated temperature processing (e.g., melting): Dust and fumes: Can cause severe irritation of the respiratory tract. Acute overexposures: Can cause the accumulation of fluid in the lungs (pulmonary edema).
Ingestion	Not relevant, due to the form of the product.
Symptoms related to the physical, chemical and toxicological characteristics	Dust and fumes from processing: Can cause irritation of the eyes, skin and upper respiratory tract. Combustion of the coatings can generate toxic and irritating gases.

Information on toxicological effects

Components	**Species**	**Test Results**
Aluminum (CAS 7429-90-5)		
Acute		
Oral		
LD50	Rat	> 10000 mg/kg
		> 2000 mg/kg
Strontium chromate‡ (CAS 7789-06-2)		
Acute		
Oral		
LD50	Rat	811 mg/kg
Compounds Formed During Processing	**Species**	**Test Results**
Aluminum oxide (non-fibrous) (CAS 1344-28-1)		
Acute		
Inhalation		
LC50	Rat	> 2.3 mg/l
		7.6 mg/l
Oral		
LD50	Rat	> 5000 mg/kg

Acute toxicity	Not classified. Based on available data, the classification criteria are not met.

Skin corrosion/irritation Not available.

Serious eye damage/eye irritation Can cause mechanical irritation.

Respiratory or skin sensitization Not classified. Based on available data, the classification criteria are not met.

Respiratory sensitization Not classified. Based on available data, the classification criteria are not met.

Skin sensitization Not classified. Based on available data, the classification criteria are not met.

Germ cell mutagenicity Not classified. Based on available data, the classification criteria are not met.

Neurological effects Not classified. Based on available data, the classification criteria are not met.

Health effects from elevated temperature processing (e.g., welding, melting): May cause central nervous system effects.

Pre-existing conditions aggravated by exposure Dust and fume from processing: Asthma, chronic lung disease, and skin rashes.

Carcinogenicity Product as shipped: Does not present any cancer hazards. Dust and fumes from processing: Can present a cancer hazard (Strontium chromate).

ACGIH Carcinogens

Aluminum (CAS 7429-90-5)	A4 Not classifiable as a human carcinogen.
Aluminum oxide (non-fibrous) (CAS 1344-28-1)	A4 Not classifiable as a human carcinogen.
Chromium (CAS 7440-47-3)	A4 Not classifiable as a human carcinogen.
Hydrogen chloride (CAS 7647-01-0)	A4 Not classifiable as a human carcinogen.
Hydrogen fluoride (CAS 7664-39-3)	A4 Not classifiable as a human carcinogen.
Magnesium oxide (CAS 1309-48-4)	A4 Not classifiable as a human carcinogen.
Manganese (CAS 7439-96-5)	A4 Not classifiable as a human carcinogen.
Strontium chromate‡ (CAS 7789-06-2)	A1 Confirmed human carcinogen. A2 Suspected human carcinogen.

IARC Monographs. Overall Evaluation of Carcinogenicity

Chromium (CAS 7440-47-3)	3 Not classifiable as to carcinogenicity to humans.
Hydrogen chloride (CAS 7647-01-0)	3 Not classifiable as to carcinogenicity to humans.
Hydrogen fluoride (CAS 7664-39-3)	3 Not classifiable as to carcinogenicity to humans.
Strontium chromate‡ (CAS 7789-06-2)	1 Carcinogenic to humans.

US OSHA Hazard Categories (10)

Not regulated.

US OSHA Hazard Categories (9)

Not regulated.

US. National Toxicology Program (NTP) Report on Carcinogens

Strontium chromate‡ (CAS 7789-06-2)	Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Strontium chromate‡ (CAS 7789-06-2)	Cancer

Reproductive toxicity Additional health effects from elevated temperature processing (e.g., welding, melting):

Routes of exposure Dust and fume from processing: Inhalation. Eye contact. Skin contact.

Specific target organ toxicity - single exposure Not classified. Based on available data, the classification criteria are not met.

Specific target organ toxicity - repeated exposure Not classified. Based on available data, the classification criteria are not met.

Aspiration hazard Not classified. Based on available data, the classification criteria are not met.

12. Ecological information

Ecotoxicity

Components		Species	Test Results
Chromium (CAS 7440-47-3)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	0.01 - 0.7 mg/l, 48 hours
Fish	LC50	Carp (Cyprinus carpio)	14.3 mg/l, 96 hours

Components		Species	Test Results
Iron (CAS 7439-89-6)			
Aquatic			
Crustacea	LC50	Cockle (Cerastoderma edule)	100 - 330 mg/l, 48 hours
		Common shrimp, sand shrimp (Crangon crangon)	33 - 100 mg/l, 48 hours
Fish	LC50	Channel catfish (Ictalurus punctatus)	> 500 mg/l, 96 hours
Manganese (CAS 7439-96-5)			
Aquatic			
Crustacea	EC50	Water flea (Daphnia magna)	40 mg/l, 48 hours

Persistence and degradability The product contains inorganic compounds which are not biodegradable.

Bioaccumulative potential The product is not bioaccumulating.

Mobility in soil Not considered mobile.

Other adverse effects None known.

13. Disposal considerations

Disposal instructions Reuse or recycle material whenever possible. If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

Waste codes RCRA Status: Not federally regulated in the U.S. if disposed of "as is." RCRA waste codes other than described here may apply depending on use of the product. Status must be determined at the point of waste generation. Refer to 40 CFR 261 or state equivalent in the U.S.
TCLP testing is recommended for chromium in a waste disposal scenario.

Waste from residues / unused products If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

Contaminated packaging Dispose of in accordance with local regulations.

14. Transport information

General Shipping Information

Basic Shipping Information

ID number -
Proper shipping name Not regulated
Hazard class -
Packing group -

General Shipping Notes

• When "Not regulated", enter the proper freight classification, SDS Number and Product Name onto the shipping paperwork.

DOT Alternate Basic Shipping Description #1

DOT Alternate Basic Shipping Description #1

Basic Shipping Information

ID number NA3077
Proper shipping name Hazardous waste, solid, n.o.s
Technical name D007
Hazard class 9
Packing group III

Notes for Alternate DOT Description

• Classification applies to shipments within the domestic U.S. when declared a waste product and meeting the TCLP criteria for Chromium.
• Insert "RQ" reference for packages containing 10 lbs or greater.

Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

15. Regulatory information

US federal regulations

In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.

All electrical equipment must be suitable for use in hazardous atmospheres involving aluminum powder in accordance with 29 CFR 1910.307. The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installation which will meet this requirement.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Strontium chromate‡ (CAS 7789-06-2)	0.1 % Annual Export Notification required.

CERCLA Hazardous Substance List (40 CFR 302.4)

Chromium (CAS 7440-47-3)	Listed.
Manganese (CAS 7439-96-5)	Listed.
Strontium chromate‡ (CAS 7789-06-2)	Listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Strontium chromate‡ (CAS 7789-06-2)	Cancer Eye irritation Skin sensitization

US OSHA Hazard Categories (9)

Not regulated.

US OSHA Hazard Categories (10)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories	Immediate Hazard - Yes	If particulates/fumes generated during processing
	Delayed Hazard - Yes	If particulates/fumes generated during processing
	Fire Hazard - Yes	
	Pressure Hazard - No	
	Reactivity Hazard - Yes	If molten

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Hydrogen chloride	7647-01-0	5000	500 lbs		
Hydrogen fluoride	7664-39-3	100	100 lbs		

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum	7429-90-5	>94
Manganese	7439-96-5	<1.5

US state regulations

US. California Proposition 65

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

Strontium chromate‡ (CAS 7789-06-2)	Listed: February 27, 1987

US - California Proposition 65 - CRT: Listed date/Developmental toxin

Strontium chromate‡ (CAS 7789-06-2)	Listed: December 19, 2008

US - California Proposition 65 - CRT: Listed date/Female reproductive toxin

Strontium chromate‡ (CAS 7789-06-2)	Listed: December 19, 2008

US - California Proposition 65 - CRT: Listed date/Male reproductive toxin

Strontium chromate‡ (CAS 7789-06-2)	Listed: December 19, 2008

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

SDS Status

June 10, 2015: New format.
February 15, 2013: Change(s) in Section: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16.
September 2, 2009: New format.
February 14, 2006: Change(s) in Section: 1, 2, 3, 4, 5, 7, 8, 11, 13, 14 and 15.
January 21, 2003: Reviewed on a periodic basis in accordance with Arconic policy. No significant changes were made.
Origination date: November 19, 1999

Hazardous Materials Control Committee
+1-412-553-4649

Revision date June 10, 2015.

Version # 06

Revision information

Product and Company Identification: Product and Company Identification
Identification: Emergency Information
Identification: Website
Composition / Information on Ingredients: Ingredients
Physical & Chemical Properties: Multiple Properties
Transport Information: Material Transportation Information
Regulatory Information: Risk Phrases - Labeling
Other information, including date of preparation or last revision: SDS Status
Other information, including date of preparation or last revision: Other information 1
GHS: Classification

Disclaimer The information in the sheet was written based on the best knowledge and experience currently available.

Other information

- Guide to Occupational Exposure Values 2016, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
- NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, September 2005.
- expub, Expert Publishing, LLC., www.expub.com,
- Ariel, 3E Company, www.3Ecompany.com
- Aluminum Association's Bulletin F-1, "Guidelines for Handling Aluminum Fines Generated During Various Aluminum Fabricating Operations." The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
- Aluminum Association, "Guidelines for Handling Molten Aluminum, The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
- NFPA 484, Standard for Combustible Metals (NFPA phone: 800-344-3555)
- NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids
- NFPA 70, Standard for National Electrical Code (Electrical Equipment, Grounding and Bonding)
- NFPA 77, Standard for Static Electricity

Key/Legend:
ACGIH American Conference of Governmental Industrial Hygienists
AICS Australian Inventory of Chemical Substances
CAS Chemical Abstract Services
CERCLA Comprehensive Environmental Response, Compensation, and Liability Act
CFR Code of Federal Regulations
CPR Cardio-pulmonary Resuscitation
DOT Department of Transportation
DSL Domestic Substances List (Canada)
EC Effective Concentration
ED Effective Dose
EINECS European Inventory of Existing Commercial Chemical Substances
ENCS Japan - Existing and New Chemical Substances
EWC European Waste Catalogue
EPA Environmental Protective Agency
IARC International Agency for Research on Cancer
LC Lethal Concentration
LD Lethal Dose
MAK Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"
NDSL Non-Domestic Substances List (Canada)
NIOSH National Institute for Occupational Safety and Health
NTP National Toxicology Program
OEL Occupational Exposure Limit
OSHA Occupational Safety and Health Administration
PIN Product Identification Number
PMCC Pensky Marten Closed Cup
RCRA Resource Conservation and Recovery Act
SARA Superfund Amendments and Reauthorization Act
SIMDUT Système d'Information sur les Matières Dangereuses Utilisées au Travail
STEL Short Term Exposure Limit
TCLP Toxic Chemicals Leachate Program
TDG Transportation of Dangerous Goods
TLV Threshold Limit Value
TSCA Toxic Substances Control Act
TWA Time Weighted Average
WHMIS Workplace Hazardous Materials Information System
m meter, cm centimeter, mm millimeter, in inch,
g gram, kg kilogram, lb pound, µg microgram,
ppm parts per million, ft feet

*** End of SDS ***

Hazard statement

The mixture does not meet the criteria for classification. May form combustible dust concentrations in air.

Precautionary statement

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Wash thoroughly after handling. Prevent dust accumulation to minimize explosion hazard. Observe good industrial hygiene practices.

Response

Wash with plenty of soap and water.

Storage

Keep dry.

Disposal

Reuse or recycle material whenever possible.

Warning

Supplemental information

Dust and fumes from processing: Can cause mechanical irritation of the eyes, skin and upper respiratory tract. Combustion of the coatings can generate toxic and irritating gases.

This product does not present fire or explosion hazards as shipped. Small chips, fine turnings and dust from processing may be readily ignitable.

Explosion/fire hazards may be present when:

- Dust or fines are dispersed in air.
- Chips, dust or fines are in contact with water.
- Dust and fines are in contact with certain metal oxides (e.g., rust, copper oxide).
- Molten metal in contact with water/moisture or certain metal oxides (e.g., rust, copper oxide).

FIRE FIGHTING MEASURES: Use coarse water spray on chips and turnings.

DO NOT USE water in fighting fires around molten metal.

DO NOT USE halogenated extinguishing agents on small chips/fines.

These fire extinguishing agents will react with the burning material.

IN CASE OF SPILL: Collect scrap for recycling. If molten: Use dry sand to contain the flow of material. All tooling (e.g., shovels or hand tools) and containers which come in contact with molten metal must be preheated or specially coated, rust free and approved for such use. Allow the spill to cool before remelting as scrap. Wear appropriate personal protective equipment.

See Arconic SDS Number 1073.

GAF
Safety Data Sheet
SDS # 2064A
SDS Date: November 2022

SECTION 1: PRODUCT AND COMPANY INFORMATION

PRODUCT NAME:	EnergyGuard™ NH Polyiso Insulation EnergyGuard™ NH Ultra Polyiso Insulation EnergyGuard™ NH Barrier Polyiso Insulation EnergyGuard™ NH Tapered Polyiso Insulation EnergyGuard™ NH Ultra Tapered Polyiso Insulation EnergyGuard™ NH HD Polyiso Cover Board EnergyGuard™ NH HD Plus Polyiso Cover Board
CHEMICAL NAME:	Polyisocyanurate
MANUFACTURER:	GAF
ADDRESS:	1 Campus Drive, Parsippany, NJ 07054
24-HOUR EMERGENCY PHONE (CHEMTREC):	800 – 424 – 9300
INFORMATION ONLY:	877 – GAF– ROOF
APPROVED BY:	Corporate EHS

SECTION 2: HAZARDS IDENTIFICATION

As defined in the OSHA Hazard Communication Standard, 29 CFR 1910.1200, the products listed below are considered articles and do not require an SDS. In addition, articles are not included in the scope of the Globally Harmonization System (GHS). As such, the GHS labeling elements are not included on this SDS. All components listed for this product are bound within the product. When handled as intended and under normal conditions of use, there is no evidence that any of the ingredients are released in amounts that pose a significant health risk. Although these products are not subject to the OSHA Standard or GHS labeling elements, GAF would like to disclose as much health and safety information as possible to ensure that this product is handled and used properly. This SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and be made available for employees and other users of this product. In addition, the recommendations for handling and use of these products should be included in worker training programs.

ADDITIONAL HAZARD IDENTIFICATION INFORMATION:

PRIMARY ROUTE OF EXPOSURE: Inhalation, Skin Contact.

SIGNS & SYMPTOMS OF EXPOSURE

EYES: May cause irritation to the eyes.

SKIN: May cause irritation to the skin.

INGESTION: Not applicable.

INHALATION: Exposure to dust may cause irritation. Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible.

ACUTE HEALTH HAZARDS: None known.

CHRONIC HEALTH HAZARDS: No data available.

CARCINOGENICITY: Not applicable.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

			OCCUPATIONAL EXPOSURE LIMITS		
CHEMICAL NAME	**CAS #**	**%**	**OSHA**	**ACGIH**	**OTHER**
Isopentane	78-78-4	4.5 - 9.9	1000 ppm	600 ppm	REL: 120 ppm
n-Pentane	109-66-0	<0.1 - 5.5	1000 ppm	600 ppm	REL: 120 ppm
Trade Secret Flame Retardant	NA	<1 - 8	NE	NE	NE
Fibrous Glass	None	<25	NE	1 f/cc	REL: 3 f/cc

NE = Not Established

Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).

SECTION 4: FIRST AID MEASURES

FIRST AID PROCEDURES

EYES:	Hold eyelids open and wash with gentle stream of water for at least 15 minutes preferably at eyewash fountain.
SKIN:	Wash affected area thoroughly with soap and water.
INHALATION:	Remove to fresh uncontaminated air.
INGESTION:	Rinse mouth. Do not give anything by mouth to an unconscious person. Consult medical personnel.
NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:	No information available

SECTION 5: FIRE FIGHTING PROCEDURES

SUITABLE EXTINGUISHING MEDIA:	Water spray, alcohol foam, carbon Dioxide, or dry chemical.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide and carbon monoxide, phosphorus oxides, and phosphoric acid.
RECOMMENDED FIRE FIGHTING PROCEDURES:	Wear impermeable protective clothing and self-contained breathing apparatus. Toxic fumes and vapors may be evolved.
UNUSUAL FIRE & EXPLOSION HAZARDS:	Emits dense, black smoke when burned. Certain operations such as grinding or cutting may lead to a buildup of dust suspended in air which can cause a dust explosion if ignited. Isopentane and n-pentane, highly flammable materials, may be present within this product. Provide adequate ventilation and appropriate dust handling systems.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:	Use only in well ventilated areas. Wear appropriate personal protective equipment. Pick up large pieces. Sweep and scoop up material and put into a suitable container for disposal as a non-hazardous waste.

SECTION 7: HANDLING AND STORAGE

HANDLING AND STORAGE:	Use only in a well-ventilated area. Wear appropriate personal protective equipment. Protect against dust that may be generated by altering or applying this product. Minimize dust generation and accumulation. Routine housekeeping should

be carried out to ensure that dusts do not accumulate on surfaces. Wash thoroughly with soap and water after handling and before eating, drinking or using tobacco products.

OTHER PRECAUTIONS: None.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS / VENTILATION: Use local mechanical ventilation.

RESPIRATORY PROTECTION: Respiratory protection may be needed when mechanically manipulating this product (sawing, cutting, etc.). If respiratory protection is selected, a NIOSH-approved dust mask or respirator should be worn.

EYE PROTECTION: Safety glasses with side shields

SKIN PROTECTION: Cotton or leather gloves are recommended when handling.

OTHER PROTECTIVE EQUIPMENT: Wear long sleeves and/or protective coveralls if determined to be needed by the end-user.

WORK HYGIENIC PRACTICES: Wash exposed skin prior to eating, drinking or smoking and at the end of each shift.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE & ODOR:	White rigid cellular sheets/odorless.		
FLASH POINT:	No Data	**LOWER EXPLOSIVE LIMIT:**	No Data
METHOD USED:	No Data	**UPPER EXPLOSIVE LIMIT:**	No Data
EVAPORATION RATE:	No Data	**BOILING POINT:**	No Data
pH (undiluted product):	No Data	**MELTING POINT:**	No Data
SOLUBILITY IN WATER:	No Data	**SPECIFIC GRAVITY:**	No Data
VAPOR DENSITY:	No Data	**PERCENT VOLATILE:**	No Data
VAPOR PRESSURE:	No Data	**MOLECULAR WEIGHT:**	No Data
VOC WITH WATER (LBS/GAL):	No Data	**WITHOUT WATER (LBS/GAL):**	No Data

SECTION 10: STABILITY AND REACTIVITY

THERMAL STABILITY:	**STABLE X**	**UNSTABLE ☐**
CONDITIONS TO AVOID (STABILITY):	None known.	
INCOMPATIBILITY (MATERIAL TO AVOID):	None known.	
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS:	Carbon dioxide and carbon monoxide	
HAZARDOUS POLYMERIZATION:	Will not occur.	

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION:

Pentane (0.05% TO 5.5%) 109-66-0
Acute Toxicity: Ingestion/Oral-Rat LD50 • >2000 mg/kg; Inhalation-Rat LC50 • 364 g/m³ 4 Hour(s)

Isopentane (4.5% TO 9.9%) 78-78-4
Acute Toxicity: Inhalation-Rat LC50 • 280000 mg/m³ 4 Hour(s)

Route(s) of entry/exposure - Inhalation, Skin, Eye, Ingestion
Medical Conditions Aggravated by Exposure - Disorders of the lungs.

Potential Health Effects
Inhalation
Acute (Immediate) - Exposure to dust may cause irritation. Processes such as cutting, grinding, crushing, or impact may result in generation of excessive amounts of airborne dusts in the workplace. Nuisance dust may affect the lungs but reactions are typically reversible.
Chronic (Delayed) - No data available

Skin
Acute (Immediate) - Exposure to dust may cause mechanical irritation.
Chronic (Delayed) - No data available.

Eye
Acute (Immediate) - Exposure to dust may cause mechanical irritation. Excessive concentrations of nuisance dust in the workplace may reduce visibility and may cause unpleasant deposits in eyes.
Chronic (Delayed) - No data available.

Ingestion
Acute (Immediate) - Excessive concentrations of nuisance dust in the workplace may cause mechanical irritation to mucous membranes.
Chronic (Delayed) - No data available.

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: No information available.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

SECTION 14: TRANSPORTATION INFORMATION

DOT
Not regulated as dangerous goods.

IATA
Not regulated as dangerous goods.

IMDG
Not regulated as dangerous goods.

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA:	This product and its components are listed on the TSCA 8(b) inventory.
CERCLA:	Not applicable.
SARA	Not applicable.
311 / 312 HAZARD CATEGORIES:	Not applicable.
313 REPORTABLE INGREDIENTS:	Not applicable.

SECTION 16: OTHER INFORMATION

ADDITIONAL COMMENTS:	None.
DATE OF PREVIOUS SDS:	March 2018
CHANGES SINCE PREVIOUS SDS:	Updated Section 1

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our

knowledge and belief accurate and reliable as of the date compiled. However, no representation, warranty or guarantee, expressed or implied, is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his particular use. We do not accept liability for any loss or damage that may occur from the use of this information. Nothing herein shall be construed as a recommendation for uses which infringe valid patents or as extending a license of valid patents.

This is a kit that contains the following components:
TREMCO LR ADHESIVE CARTRG- PRT "A"
TREMCO LR ADHESIVE CARTRG- PRT "B"

SAFETY DATA SHEET

1. Identification

Product identifier: TREMCO LR ADHESIVE CARTRG- PRT "A"
Product Code: 362300K410

Recommended use and restriction on use

Recommended use: Adhesive
Restrictions on use: Not known.

Tremco Low Rise Foam Insulation Adhesive is a fast setting, high-performance adhesive used in roofing systems for bonding approved insulations to base sheets, structural roof decks, and other approved insulations.

Manufacturer/Importer/Supplier/Distributor Information
Tremco U.S. Roofing
3735 Green Road
Beachwood OH 44122
US

Contact person:	EH&S Department
Telephone:	216-292-5000
Emergency telephone number:	1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin Corrosion/Irritation	Category 2
Respiratory sensitizer	Category 1
Skin sensitizer	Category 1
Carcinogenicity	Category 2

Unknown toxicity - Health

Acute toxicity, oral	62 %
Acute toxicity, dermal	62 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	100 %

Label Elements

Hazard Symbol:

Signal Word:	Danger
Hazard Statement:	Causes skin irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. Suspected of causing cancer.
Precautionary Statements	
Prevention:	Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. [In case of inadequate ventilation] wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Response:	If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. IF exposed or concerned: Get medical advice/attention. Specific treatment (see on this label). Wash contaminated clothing before reuse.
Storage:	Store locked up.
Disposal:	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC):	None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
4,4'-Methylene bis(phenylisocyanate)	101-68-8	20 - <50%
Diphenylmethane diisocyanate	26447-40-5	5 - <10%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of necessary first-aid measures

Inhalation:	Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.

Skin Contact:	Get medical attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Ingestion:	Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
Personal Protection for First-aid Responders:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Most important symptoms/effects, acute and delayed

Symptoms:	Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.
Hazards:	No data available.

Indication of immediate medical attention and special treatment needed

Treatment:	Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards:	No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media:	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No data available.
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Ventilate closed spaces before entering them. Evacuate area. See Section 8 of the SDS for Personal Protective Equipment. Keep upwind. Keep unauthorized personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Accidental release measures:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.
Methods and material for containment and cleaning up:	Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.
Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation):	Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.
Safe handling advice:	Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes, skin, and clothing.Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Contact avoidance measures:	No data available.
Hygiene measures:	Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace.

Storage

Safe storage conditions:	Store locked up.
Safe packaging materials:	No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	US. ACGIH Threshold Limit Values, as amended (2011)
	Ceiling	0.02 ppm 0.2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)

Chemical name	Type	Exposure Limit Values	Source
Polymethylene polyphenyl isocyanate	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
4,4'-Methylene bis(phenylisocyanate)	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm 0.051 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Diphenylmethane diisocyanate	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)

Appropriate Engineering Controls Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

General information: Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection: Wear safety glasses with side shields (or goggles).

Skin Protection
Hand Protection: Use suitable protective gloves if risk of skin contact.

Other: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory Protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.
Hygiene measures:	Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Dark amber
Odor:	Characteristic
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	220 °C 428 °F
Evaporation rate:	Slower than n-Butyl Acetate
Flammability (solid, gas):	No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1.22
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity: No data available.

Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	Alcohols. Amines. Strong acids. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Strong bases. Water, moisture.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Causes skin irritation. May cause an allergic skin reaction.
Eye contact:	Eye contact is possible and should be avoided.
Ingestion:	May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	No data available.
Skin Contact:	No data available.
Eye contact:	No data available.
Ingestion:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product:	ATEmix: 2,000 mg/kg

Dermal

Product:	Not classified for acute toxicity based on available data.
Specified substance(s):	
4,4'-Methylene bis(phenylisocyanate)	LD 50 (Rabbit): > 9,400 mg/kg

Inhalation

Product:

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Specified substance(s):

4,4'-Methylene bis(phenylisocyanate)	in vivo (Rabbit): Irritating

Serious Eye Damage/Eye Irritation
Product: No data available.

Respiratory or Skin Sensitization
Product: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause sensitization by inhalation.

Carcinogenicity
Product: Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: No data available.

Specific Target Organ Toxicity - Single Exposure
Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: No data available.

BOD/COD Ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration Factor (BCF)
Product: No data available.

Partition Coefficient n-octanol / water (log Kow)
Product: No data available.

Mobility in soil: No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal methods: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
4,4'-Methylene bis(phenylisocyanate)	5000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

Chemical Identity	Reportable quantity
4,4'-Methylene bis(phenylisocyanate)	5000 lbs.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
4,4'-Methylene bis(phenylisocyanate)	10000 lbs
Diphenylmethane diisocyanate	10000 lbs

SARA 313 (TRI Reporting)

Chemical Identity
Polymethylene polyphenyl isocyanate
4,4'-Methylene bis(phenylisocyanate)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65

No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Polymethylene polyphenyl isocyanate
4,4'-Methylene bis(phenylisocyanate)
Diphenylmethane diisocyanate

US. Massachusetts RTK - Substance List

Chemical Identity
4,4'-Methylene bis(phenylisocyanate)

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
4,4'-Methylene bis(phenylisocyanate)

US. Rhode Island RTK

Chemical Identity
Polymethylene polyphenyl isocyanate
4,4'-Methylene bis(phenylisocyanate)

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

VOC: When appropriately mixed with the other part, product has a VOC less water and exempt solvent of: < 50 g/l

Regulatory VOC (less water and exempt solvent)	:	0 g/l
VOC Method 310	:	0.00 %

Inventory Status:

Australia AICS:	All components in this product are listed on or exempt from the Inventory.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	All components in this product are listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	All components in this product are listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	All components in this product are listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	All components in this product are listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	All components in this product are listed on or exempt from the Inventory.
Japan ISHL Listing:	All components in this product are listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Mexico INSQ:	One or more components in this product are not listed on or exempt from the Inventory.
Ontario Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Taiwan Chemical Substance Inventory:	One or more components in this product are not listed on or exempt from the Inventory.

16.Other information, including date of preparation or last revision

Revision Date:	05/21/2020
Version #:	1.0
Further Information:	No data available.
Disclaimer:	For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

SAFETY DATA SHEET

1. Identification

Product identifier: TREMCO LR ADHESIVE CARTRG- PRT "B"
Product Code: 362300K410

Recommended use and restriction on use

Recommended use: Adhesive
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information
Tremco U.S. Roofing
3735 Green Road
Beachwood OH 44122
US

Contact person:	EH&S Department
Telephone:	216-292-5000
Emergency telephone number:	1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Toxic to reproduction	Category 2

Unknown toxicity - Health

Acute toxicity, oral	97 %
Acute toxicity, dermal	99.5 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	99.5 %

Label Elements

Hazard Symbol:

Signal Word: Warning

Hazard Statement: Suspected of damaging fertility or the unborn child.

Precautionary Statements

Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Response:	IF exposed or concerned: Get medical advice/attention.
Storage:	Store locked up.
Disposal:	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Octamethylcyclotetrasiloxane	556-67-2	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of necessary first-aid measures

Inhalation:	Move to fresh air.
Skin Contact:	Remove contaminated clothing and wash the skin thoroughly with soap and water after work.
Eye contact:	Rinse immediately with plenty of water.
Ingestion:	Rinse mouth thoroughly.
Personal Protection for First-aid Responders:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Most important symptoms/effects, acute and delayed

Symptoms:	May cause skin and eye irritation.
Hazards:	No data available.

Indication of immediate medical attention and special treatment needed

Treatment:	Get medical attention if symptoms occur.

5. Fire-fighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: No data available.

Special protective equipment for fire-fighters: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: No data available.

Accidental release measures: In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Methods and material for containment and cleaning up: Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Environmental Precautions: Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Safe handling advice: Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required.

Contact avoidance measures: No data available.

Hygiene measures:	Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.

Storage

Safe storage conditions:	Store locked up.
Safe packaging materials:	No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

None of the components have assigned exposure limits.
None of the components have assigned exposure limits.
None of the components have assigned exposure limits.

Appropriate Engineering Controls	Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

General information:	Use personal protective equipment as required.
Eye/face protection:	Wear goggles/face shield.
Skin Protection	
Hand Protection:	Use suitable protective gloves if risk of skin contact.
Other:	No data available.
Respiratory Protection:	In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.
Hygiene measures:	Do not handle until all safety precautions have been read and understood. Obtain special instructions before use.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Clear
Odor:	Mild
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	Slower than n-Butyl Acetate
Flammability (solid, gas):	No

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	1
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	Alcohols. Amines. Strong acids. Avoid contact with oxidizing agents (e.g. nitric acid, peroxides and chromates). Strong bases. Water, moisture.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Moderately irritating to skin with prolonged exposure.
Eye contact:	Eye contact is possible and should be avoided.
Ingestion:	May be ingested by accident. Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation:	No data available.
Skin Contact:	No data available.

Eye contact: No data available.

Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: Not classified for acute toxicity based on available data.

Dermal
Product: Not classified for acute toxicity based on available data.

Inhalation
Product: Not classified for acute toxicity based on available data.

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: No data available.

Serious Eye Damage/Eye Irritation
Product: No data available.

Respiratory or Skin Sensitization
Product: No data available.

Carcinogenicity
Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity
Product: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure
Product: No data available.

Aspiration Hazard
Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Chronic hazards to the aquatic environment:

Fish
Product: No data available.

Aquatic Invertebrates
Product: No data available.

Toxicity to Aquatic Plants
Product: No data available.

Persistence and Degradability

Biodegradation
Product: No data available.

BOD/COD Ratio
Product: No data available.

Bioaccumulative potential
Bioconcentration Factor (BCF)
Product: No data available.

Partition Coefficient n-octanol / water (log Kow)
Product: No data available.

Mobility in soil: No data available.

Other adverse effects: No data available.

13. Disposal considerations

Disposal methods: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Delayed (Chronic) Health Hazard
Reproductive toxicity

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification
None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Octamethylcyclotetrasiloxane	10000 lbs

SARA 313 (TRI Reporting)
None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)
None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)
None present or none present in regulated quantities.

US State Regulations

US. California Proposition 65
No ingredient requiring a warning under CA Prop 65.

US. New Jersey Worker and Community Right-to-Know Act
No ingredient regulated by NJ Right-to-Know Law present.

US. Massachusetts RTK - Substance List
No ingredient regulated by MA Right-to-Know Law present.

US. Pennsylvania RTK - Hazardous Substances
No ingredient regulated by PA Right-to-Know Law present.

US. Rhode Island RTK
No ingredient regulated by RI Right-to-Know Law present.

International regulations

Montreal protocol
Not applicable

Stockholm convention
Not applicable

Rotterdam convention
Not applicable

Kyoto protocol
Not applicable

VOC: When appropriately mixed with the other part, product has a VOC less water and exempt solvent of: 32 g/l

Regulatory VOC (less water and exempt solvent)	:	0 g/l
VOC Method 310	:	0.00 %

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Mexico INSQ:	One or more components in this product are not listed on or exempt from the Inventory.
Ontario Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Taiwan Chemical Substance Inventory:	One or more components in this product are not listed on or exempt from the Inventory.

16.Other information, including date of preparation or last revision

Revision Date:	05/21/2020
Version #:	1.0
Further Information:	No data available.
Disclaimer:	For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.

SAFETY DATA SHEET

1. Identification

Product identifier **USG SECUROCK® Brand Ultralight Coated Glass-Mat Roof Board**

Other means of identification

SDS number 540000005005

Synonyms Gypsum Panels, Drywall, Plasterboard, Wallboard

Recommended use Exterior use.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company name United States Gypsum Company

Address 550 West Adams Street
Chicago, Illinois 60661-3637

Telephone 1-800-874-4968

Website www.usg.com

Emergency phone number 1-800-507-8699

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement None.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Get medical attention/advice if you feel unwell.

Storage Store as indicated in Section 7.

Disposal Dispose of in accordance with local, state, and federal regulations.

Hazard(s) not otherwise classified (HNOC) None known.

Supplemental information None.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Calcium sulfate dihydrate (alternative CAS 10101-41-4)	13397-24-5	≥ 85
Continuous filament glass fiber	65997-17-3	< 20
Sodium pyrithione	3811-73-2	< 0.25
Limestone	471-34-1	< 5

Impurities

Chemical name	CAS number	%
Crystalline silica (Quartz)	14808-60-7	≤ 0.90