SAFETY DATA SHEET

Bond 25 A

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: **Bond 25 A**

Revision Date: 08/01/2025

Manufacturer's Name and Phone: **Progressive Fastening 909-945-5530**

Address: 1190 N Del Rio Pl. Ontario, CA 91764

Emergency Phone: **INFOTRAC: (800) 535-5053 (24 HOUR SERVICE) Within USA or Canada**

Product/Recommended Uses: Refer to the Product Technical Data Sheet.

2. HAZARDS IDENTIFICATION

Classification

Aspiration Hazard - Category 1

Carcinogenicity - Category 2

Eye Irritation - Category 2A

Respiratory Sensitizer (Solid/Liquid) - Category 1

Skin Irritation - Category 2

Skin Sensitizer - Category 1

Specific Target Organ Toxicity - Repeated Exposure - Category 2

Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) - Category 3

Safety data sheet prepared in accordance to the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

Pictograms

Signal Word

Danger

Hazardous Statements - Health

H304 - May be fatal if swallowed and enters airways

H351 - Suspected of causing cancer.

H319 - Causes serious eye irritation

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H373 - May cause damage to organs through prolonged or repeated exposure.

H335 - May cause respiratory irritation

Precautionary Statements - General

P101 - If medical advice is needed, have product container or label at hand.

P102 - Keep out of reach of children.

P103 - Read label before use.

Precautionary Statements - Prevention

P201 - Obtain special instructions before use.

P202 - Do not handle until all safety precautions have been read and understood.

P280 - Wear protective gloves,protective clothing,eye protection/face protection.

P264 - Wash thoroughly after handling.

P284 - In case of inadequate ventilation, wear respiratory protection

P272 - Contaminated work clothing should not be allowed out of the workplace.

P260 - Do not breathe dust/fume/gas/mist/vapors/spray.

P271 - Use only outdoors or in a well-ventilated area.

P233 - Keep container tightly closed.

Precautionary Statements - Response

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.

P331 - Do NOT induce vomiting.

P308 + P313 - IF exposed or concerned: Get medical advice/attention.

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 - If eye irritation persists: Get medical advice/attention.

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER/doctor.

P302 + P352 - IF ON SKIN: Wash with plenty of water.

P321 - Specific treatment (see section 4 on this SDS).

P362 + P364 - Take off contaminated clothing. And wash it before reuse.

P333 + P313 - If skin irritation or a rash occurs: Get medical advice/attention.

P314 - Get Medical advice/attention if you feel unwell.

P312 - Call a POISON CENTER/doctor if you feel unwell.

Precautionary Statements - Storage

P405 - Store locked up.

P403 + P405 - Store in a well-ventilated place. Store locked up.

Precautionary Statements - Disposal

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

Acute toxicity of 20.1% of the mixture is unknown

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0009016-87-9	POLYMETHYLENE POLYPHENYL ISOCYANATE	27% - 50%
0000101-68-8	4,4'-METHYLENEDIPHENYL DIISOCYANATE	15% - 28%
0068515-49-1	PHTHALATE ESTER	13% - 24%
0064742-46-7	MINERAL SEAL OIL	8% - 14%
0026447-40-5	MDI (MONOMER)	2% - 4%
0017589-24-1	1,3-DIAZETIDINE-2,4-DIONE, 1,3-BIS[4-[(4-ISOCYANATOPHENYL)METHYL]PHENYL]-	1% - 1.7%
0057636-09-6	ISOCYANIC ACID, POLYMETHYLENEPOLYPHENYLENE ESTER, POLYMER WITH .ALPHA.-HYDRO-.OMEGA.-HYDROXYPOLY(OXY-1,2-ETHANEDIYL)	1% - 1.7%

Specific chemical identity and/or exact percentage (concentration) of the composition has been withheld to protect confidentiality.

4. FIRST-AID MEASURES

Inhalation

Remove source of exposure or move person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor.

If exposed/feel unwell/concerned: Call a POISON CENTER/doctor.

Eliminate all ignition sources if safe to do so.

Skin Contact

Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Gently blot or brush away excess product. Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before re-use or discard.

IF exposed or concerned: Get medical advice/attention.

Eye Contact

Avoid direct contact. Wear chemical protective gloves, if necessary.

Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. If vomiting occurs naturally, lie on your side, in the recovery position.

IF exposed or concerned: Get medical advice/attention.

5 FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical, foam, carbon dioxide is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Sand or earth may be used for small fires only.

Unsuitable Extinguishing Media

If water is used, use very large quantities of cold water. The reaction between water and hot isocyanate may be vigorous.

Specific Hazards in Case of Fire

Vapors may accumulate and travel to ignition sources distant from the handling site; flash fire can occur.

Excessive pressure or temperature may cause explosive rupture of containers.

Water contamination will produce carbon dioxide. Do not reseal contaminated containers as pressure buildup may rupture them.

Fire-fighting Procedures

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Actions

Wear NIOSH approved self-contained breathing apparatus in positive pressure mode with full-face piece. Boots, gloves (neoprene), goggles, and full protective clothing are also required.

Care should always be exercised in dust/mist areas.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedure

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
Do not touch or walk through spilled material.
Isolate hazard area and keep unnecessary people away. Remove all possible sources of ignition in the surrounding area. Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
If spilled material is cleaned up using a regulated solvent, the resulting waste mixture may be regulated.

Personal Precautions

Avoid breathing vapors. Avoid contact with skin, eyes or clothing. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

Methods and Materials for Containment and Cleaning up

Cover container, but do not seal, and remove from work area. Prepare a decontamination solution of 2.0% liquid detergent and 3-8% concentrated ammonium hydroxide in water (5-10% sodium carbonate may be substituted for the ammonium hydroxide). Follow the precautions on the supplier's safety data sheets.

Treat the spill area with the decontamination solution, using about 10 parts of the solution for each part of the spill, and allow it to react for at least 15 minutes. Carbon dioxide will be evolved, leaving insoluble polyureas. Residues from spill cleanup, even when treated as described may continue to be regulated under provisions of RCRA and require storage and disposal as hazardous waste.

Slowly stir the isocyanate waste into the decontamination solution described above. Let stand for 48 hours, allowing the evolved carbon dioxide to vent away, residues may still be subject to RCRA storage and disposal requirements. Dispose off in compliance with all relevant local, state, and federal laws and regulations regarding treatment.

Recommended Equipment

Appropriate dust or face mask to eliminate breathing foam dust particulates.

7. HANDLING AND STORAGE

General

Wash hands after use.
Do not get in eyes, on skin or on clothing.
Do not breathe vapors or mists.
Use good personal hygiene practices.
Eating, drinking and smoking in work areas is prohibited.
Remove contaminated clothing and protective equipment before entering eating areas.

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source.

Storage Room Requirements

Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight, strong oxidizers and any incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty container retain residue and may be dangerous.
Use non-sparking ventilation systems, approved explosion-proof equipment and intrinsically safe electrical systems in areas where this product is used and stored.

Ground and bond containers and receiving equipment. Avoid static electricity by grounding.

Do not cut, drill, grind, weld, or perform similar operations on or near containers. Do not pressurize containers to empty them. Ground all structures, transfer containers and equipment to conform to the national electrical code. Use procedures that prevent static electrical sparks. Static electricity may accumulate and create a fire hazard.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear eye protection with side shields or goggles. Wear indirect-vent, impact and splash resistant goggles when working with liquids. If additional protection is needed for entire face, use in combination with a face shield.

Skin Protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC,

neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use of an apron and over- boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.

Depending on conditions of use, additional protection may be required such as apron, arm covers, or full body suit. Wash contaminated clothing before re-wearing.

Respiratory protection

If airborne concentrations exceed or are expected to exceed the TLV, use MSHA/NIOSH approved positive pressure supplied pressure supplied air respiratory with a full face piece or an air supplied hood. For emergencies, use a positive pressure self-contained breathing apparatus. Air purifying (cartridge type) respirators are not approved for protection against isocyanates.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	OSHA TWA (ppm)	OSHA TWA (mg/m3)	OSHA STEL (ppm)	OSHA STEL (mg/m3)	OSHA Tables (Z1, Z2, Z3)	OSHA Carcinogen	OSHA Skin designation	NIOSH TWA (ppm)
4,4'-METHYLENEDIPHENYL DIISOCYANATE	0.02 ceiling	0.2 ceiling			1			0.005
MINERAL SEAL OIL	500	2000			1			

Chemical Name	NIOSH TWA (mg/m3)	NIOSH STEL (ppm)	NIOSH STEL (mg/m3)	NIOSH Carcinogen	ACGIH TWA (ppm)	ACGIH TWA (mg/m3)	ACGIH STEL (ppm)	ACGIH STEL (mg/m3)
4,4'-METHYLENEDIPHENYL DIISOCYANATE	0.050				0.005			
MINERAL SEAL OIL					(L)[N159](L)[N800]	[(L)[N159](L)[N800]]; [5 (I)[N159]5 (I)[N800]];		

9. PHYSICAL AND CHEMICAL PROPERTIES

Density	9.31 lb/gal
Specific Gravity	1.12
VOC Regulatory	0.00 lb/gal
VOC Part A & B Combined	0.47 lb/gal
Appearance	Liquid
Odor Threshold	N.A.
Odor Description	Aromatic
pH	N.A.
Water Solubility	N.A.
Flammability	N/A

Flash Point Symbol	N.A.	**Physical and Chemical Properties**
Flash Point	°C	
Viscosity	N.A.	
Lower Explosion Level	N.A.	
Upper Explosion Level	N.A.	
Vapor Pressure	N.A.	
Vapor Density	Heavier than air	
Freezing Point	N.A.	
Melting Point	N.A.	
Low Boiling Point	100 °C	
High Boiling Point	N.A.	
Auto Ignition Temp	N.A.	
Decomposition Pt	N.A.	
Evaporation Rate	Slower than ether	
Coefficient Water/Oil	N.A.	

10. STABILITY AND REACTIVITY

Conditions To Avoid

Heat, high temperature, open flame, sparks, and moisture. Contact with incompatible materials in a closed system will cause liberation of carbon dioxide and buildup of pressure.

Hazardous Reactions/Polymerization

Will not occur under normal conditions but under high temperatures in the presence of alkalis,tertiary amines, and metal compounds will accelerate polymerization. Possible evolution of carbon dioxide gas may rupture closed containers.

Incompatible Materials

This product will react with any material containing active hydrogens, such as water, alcohol, ammonia, amines, alkalis and acids, the reaction with water is slow under 50°C, (122°F), but is accelerated at higher temperature and in the presence of alkalis, tertiary amines, and metal compounds. Some reactions can be violent. Material can react with strong oxidizing agents.

Hazardous Decomposition Products

Carbon dioxide, carbon monoxide, nitrogen oxides, trace amounts of hydrogen cyanide and unidentified organic compounds may be formed during combustion.

Stability

Material is stable at standard temperature and pressure.

11. TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation

Isocyanates react with skin protein and moisture and can cause irritation. Prolonged contact can cause reddening, swelling, rash, scaling, blistering, and, in some cases, skin sensitization. Individuals who have developed a skin sensitization can develop these symptoms as a result of contact with very small amounts of liquid material or as a result of exposure to vapor. Causes skin irritation.

Serious Eye Damage/Irritation

Liquid, aerosols or vapors are severely irritating and can cause pain, tearing, reddening and swelling. Prolonged vapor contact may cause conjunctivitis. Any level of contact should not be left untreated. Causes serious eye irritation.

Respiratory/Skin Sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

Carcinogenicity

Suspected of causing cancer.

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met.

Reproductive Toxicity

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure

May cause respiratory irritation

Specific Target Organ Toxicity - Repeated Exposure

May cause damage to organs through prolonged or repeated exposure.

Aspiration Hazard

May be fatal if swallowed and enters airways

Acute Toxicity

Based on available data, the classification criteria are not met.

Likely Routes of Exposure

Inhalation, Ingestion, Skin contact, Eye contact

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

0000101-68-8 4,4'-METHYLENEDIPHENYL DIISOCYANATE

LC50 (rat): 369-490 mg/m3 (aerosol) (4-hour exposure) (1)
LC50 (rat): 178 mg/m3 (17.4 ppm) (duration of exposure not reported) (2)

LD50 (oral, rat): greater than 10,000 mg/kg (1,2)
LD50 (dermal, rabbit): greater than 10,000 mg/kg (1)
LD50 (oral, mouse): 2,200 mg/kg (3)

0009016-87-9 POLYMETHYLENE POLYPHENYL ISOCYANATE

LC50 (rat): 490 mg/m3 (aerosol) 4-hour exposure (22)

LD50 (oral, rat): greater than 10000 mg/kg (PMPPI) (2)
LD50 (dermal, rabbit): greater than 5 mL/kg (6200 mg/kg) (PMPPI) (2)

12. ECOLOGICAL INFORMATION

Toxicity

Based on available data, the classification criteria are not met.

Persistence and Degradability

No data available.

Bioaccumulative Potential

No data available.

Mobility in Soil

No data available.

Other Adverse Effects

No data available.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Under RCRA, it is the responsibility of the user of the product, to determine a the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws.

Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

14. TRANSPORT INFORMATION

U.S. DOT Information

Not regulated

IMDG Information

Not regulated.

IATA Information

Not regulated.

15. REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0009016-87-9	POLYMETHYLENE POLYPHENYL ISOCYANATE	27% - 50%	SARA313, DSL, SARA312, VOC, TSCA
0000101-68-8	4,4'-METHYLENEDIPHENYL DIISOCYANATE	15% - 28%	SARA313, DSL, CERCLA, HAPS, SARA312, OC_HAPS, VOC, TSCA
0068515-49-1	PHTHALATE ESTER	13% - 24%	DSL, SARA312, TSCA, CA_Prop65 - California Proposition 65
0064742-46-7	MINERAL SEAL OIL	8% - 14%	DSL, SARA312, VOC, TSCA
0026447-40-5	MDI (MONOMER)	2% - 4%	DSL, SARA312, VOC, TSCA
0017589-24-1	1,3-DIAZETIDINE-2,4-DIONE, 1,3-BIS[4-[(4-ISOCYANATOPHENYL)METHYL]PHENYL]-	1% - 1.7%	DSL, SARA312, TSCA
0057636-09-6	ISOCYANIC ACID, POLYMETHYLENEPOLYPHENYLENE ESTER, POLYMER WITH .ALPHA.HYDRO-.OMEGA.HYDROXYPOLY(OXY-1,2-ETHANEDIYL)	1% - 1.7%	DSL, SARA312, TSCA

16. OTHER INFORMATION

OTHER INFORMATION

Note: As per GHS, category 1 is the greatest level of hazard within each class.

DISCLAIMER

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. The above information pertains to this product as currently formulated and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.

SAFETY DATA SHEET
Bond 25 B

1. PRODUCT & COMPANY IDENTIFICATION

Product Name: **Bond 25** B

Revision Date: 08/01/2025

Manufacturer's Name and Phone: **Progressive Fastening 909-945-5530**

Address: 1190 N Del Rio Pl. Ontario, CA 91764

Emergency Phone: **INFOTRAC: (800) 535-5053 (24 HOUR SERVICE) Within USA or Canada**

Product/Recommended Uses: Refer to the Product Technical Data Sheet.

2. HAZARDS IDENTIFICATION

Classification

Not classified as a hazardous substance or mixture in accordance to the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

3. COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% By Weight
0000107-21-1	ETHYLENE GLYCOL	0.2% - 0.3%
0000280-57-9	1,4-DIAZOBICYCLO (2,2,2)OCTANE	0.1% - 0.2%
0103969-79-5	HYDROXYPROPYLAMMOINIUM DIAZABICYCLO[2,2,2]OCTANE-2ETHYLHEXANOATE, N-2-(P84-696)	Trace

Specific chemical identity and/or exact percentage (concentration) of the composition has been withheld to protect confidentiality.

4. FIRST-AID MEASURES

Inhalation

Remove source of exposure or move person to fresh air and keep comfortable for breathing.

If exposed/feel unwell/concerned: Call a POISON CENTER/doctor.

Skin Contact

Rinse/wash with lukewarm, gently flowing water and mild soap for 15-20 minutes or until product is removed. If skin irritation occurs or you feel unwell: Get medical advice/attention.

Eye Contact

Remove source of exposure or move person to fresh air. Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

Ingestion

Rinse mouth. If you feel unwell/If concerned: Get medical advice/attention.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical, foam, carbon dioxide is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Simultaneous use of foam and water on the same surface is to be avoided as water destroys the foam. Sand or earth may be used for small fires only.

Unsuitable Extinguishing Media

Water and foam may cause violent frothing and possibly endanger the life of the fire fighter, especially if sprayed into containers of hot, burning material.

Specific Hazards in Case of Fire

Hazardous combustion products include oxides of carbon and nitrogen, various hydrocarbons.

Fire-fighting Procedures

Isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done safely. Move undamaged containers from immediate hazard area if it can be done safely. Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Water may be ineffective but can be used to cool containers exposed to heat or flame. Caution should be exercised when using water or foam as frothing may occur, especially if sprayed into containers of hot, burning liquid.

Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Special Protective Actions

Care should always be exercised in dust/mist areas.

Wear protective pressure self-contained breathing apparatus (SCBA)and full turnout gear.

6. ACCIDENTAL RELEASE MEASURES

Emergency Procedure

Keep unnecessary people away; isolate hazard area and deny entry. Do not touch or walk through spilled material. Clean up immediately.

Personal Precautions

Avoid breathing vapors. Avoid contact with skin, eyes or clothing. Do not touch damaged containers or spilled materials unless wearing appropriate protective clothing.

Environmental Precautions

Stop spill/release if it can be done safely. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems and natural waterways by using sand, earth, or other appropriate barriers.

Methods and Materials for Containment and Cleaning up

Confine spillage and absorb on sand, sawdust, or other suitable absorbent material and transfer to a sealed container.

Recommended Equipment

Appropriate dust or face mask to eliminate breathing foam dust particulates.

7. HANDLING AND STORAGE

General

Wash hands after use.
Do not get in eyes, on skin or on clothing.
Do not breathe vapors or mists.
Use good personal hygiene practices.
Eating, drinking and smoking in work areas is prohibited.
Remove contaminated clothing and protective equipment before entering eating areas.

Vent containers before melting the material.

Ventilation Requirements

Use only with adequate ventilation to control air contaminants to their exposure limits. The use of local ventilation is recommended to control emissions near the source.

Storage Room Requirements

Keep container(s) tightly closed and properly labeled. Store in cool, dry, well-ventilated areas away from heat, direct sunlight, strong oxidizers and any incompatibilities. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Indoor storage should meet OSHA standards and appropriate fire codes. Containers that have been opened must be carefully resealed to prevent leakage. Empty container retain residue and may be dangerous.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Eye protection

Wear eye protection with side shields or goggles.

Skin Protection

Use of gloves approved to relevant standards made from the following materials may provide suitable chemical protection: PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, glove thickness, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Use of an apron and over- boots of chemically impervious materials such as neoprene or nitrile rubber is recommended to avoid skin sensitization. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Launder soiled clothes or properly disposed of contaminated material, which cannot be decontaminated.

Respiratory protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker, a respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed. Check with respiratory protective equipment suppliers. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

Appropriate Engineering Controls

Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

Chemical Name	OSHA TWA (ppm)	OSHA TWA (mg/m3)	OSHA STEL (ppm)	OSHA STEL (mg/m3)	OSHA Tables (Z1, Z2, Z3)	OSHA Carcinogen	OSHA Skin designation	NIOSH TWA (ppm)
ETHYLENE GLYCOL								
Chemical Name	**NIOSH TWA (mg/m3)**	**NIOSH STEL (ppm)**	**NIOSH STEL (mg/m3)**	**NIOSH Carcinogen**	**ACGIH TWA (ppm)**	**ACGIH TWA (mg/m3)**	**ACGIH STEL (ppm)**	**ACGIH STEL (mg/m3)**
ETHYLENE GLYCOL					25 (v)		50 (v)	10 (I,H)

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Density	8.73 lb/gal
Specific Gravity	1.05
VOC Regulatory	0.00 lb/gal
VOC Part A & B Combined	0.47 lb/gal
Appearance	Liquid
Odor Threshold	N.A.
Odor Description	Mild-chemical
pH	N.A.
Water Solubility	N.A.
Flammability	N/A
Flash Point Symbol	N.A.
Flash Point	°C
Viscosity	N.A.
Lower Explosion Level	N.A.
Upper Explosion Level	N.A.
Vapor Pressure	N.A.
Vapor Density	Heavier than air
Freezing Point	N.A.
Melting Point	N.A.
Low Boiling Point	130 °C
High Boiling Point	N.A.
Auto Ignition Temp	N.A.

Decomposition Pt	N.A.
Evaporation Rate	Slower than ether
Coefficient Water/Oil	N.A.

10. STABILITY AND REACTIVITY

Conditions To Avoid

Avoid storage at low or high temperatures.

Hazardous Reactions/Polymerization

Contact with isocyanates and strong oxidizers may cause highly exothermic polymerization reaction, which can be violent.

Incompatible Materials

Strong mineral acids and strong alkalis will seriously degrade material. Heat may be involved.

Hazardous Decomposition Products

Combustion by-products: Oxides of carbon, various hydrocarbons.

Stability

Material is stable at standard temperature and pressure.

11. TOXICOLOGICAL INFORMATION

Skin Corrosion/Irritation

Based on available data, the classification criteria are not met.

Serious Eye Damage/Irritation

Based on available data, the classification criteria are not met.

Respiratory/Skin Sensitization

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Germ Cell Mutagenicity

Based on available data, the classification criteria are not met.

Reproductive Toxicity

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Single Exposure

Based on available data, the classification criteria are not met.

Specific Target Organ Toxicity - Repeated Exposure

Based on available data, the classification criteria are not met.

0000107-21-1 ETHYLENE GLYCOL

The substance may cause effects on kidneys as a result of repeated ingestion.

Aspiration Hazard

Based on available data, the classification criteria are not met.

Acute Toxicity

Based on available data, the classification criteria are not met.

Likely Routes of Exposure

Inhalation, Ingestion, Skin contact, Eye contact

0000107-21-1 ETHYLENE GLYCOL

The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

0000107-21-1 ETHYLENE GLYCOL

LD50 (oral, rat): 5.89 g/kg; 8.54 g/kg; 13.0 g/kg (5)

LD50 (oral, mouse): 7.5 g/kg; 15.28 g/kg (5,6)
LD50 (oral, guinea pig): 6.6 g/kg; 11.0 g/kg (5)
LD50 (oral, rabbit): 5.0 g/kg (5)
LD50 (dermal, rabbit): 9.5 g/kg (6)

12. ECOLOGICAL INFORMATION

Toxicity

Based on available data, the classification criteria are not met.

Persistence and Degradability 0000107-21-1 ETHYLENE GLYCOL

Readily biodegradable.

Bioaccumulative Potential

0000107-21-1 ETHYLENE GLYCOL

No potential for bioaccumulation.

Mobility in Soil

0000107-21-1 ETHYLENE GLYCOL

Adsorption to solid soil phase is not expected. Ethylene glycol will preferentially be distributed into the compartment water.

Other Adverse Effects

No data available.

Results of the PBT and vPvB assessment

0000107-21-1 ETHYLENE GLYCOL The substance is not PBT / vPvB.

13. DISPOSAL CONSIDERATIONS

Waste Disposal

Under RCRA, it is the responsibility of the user of the product, to determine a the time of disposal whether the product meets RCRA criteria for hazardous waste. Waste management should be in full compliance with federal, state, and local laws.

Empty containers retain product residue which may exhibit hazards of material, therefore do not pressurize, cut, glaze, weld or use for any other purposes. Return drums to reclamation centers for proper cleaning and reuse.

14. TRANSPORT INFORMATION

U.S. DOT Information

Not regulated

IMDG Information

Not regulated.

IATA Information

Not regulated.

15. REGULATORY INFORMATION

CAS	Chemical Name	% By Weight	Regulation List
0000107-21-1	ETHYLENE GLYCOL	0.2% - 0.3%	SARA313, DSL, CERCLA, HAPS, SARA312, OC_HAPS, VOC, TSCA, CA_Prop65 - California Proposition 65
0000280-57-9	1,4-DIAZOBICYCLO (2,2,2)OCTANE	0.1% - 0.2%	DSL, SARA312, TSCA

16. OTHER INFORMATION

OTHER INFORMATION

Note: As per GHS, category 1 is the greatest level of hazard within each class.

DISCLAIMER

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