


1. Product Identification

Product name	Flotation Foam, Part A	
SDS Number	3700A00	
Product type	Polyisocyanate Resin Mixture	
Recommended use of the chemical and restrictions on use	Polyurethane component intended for, but not limited to marine flotation.	
Restrictions	None known	
Manufacturer/Supplier information		
Company name	SYSTEM THREE RESINS, INC.	
Address	8517 Commerce Place Dr NE Lacey, WA 98516 United States	
Telephone	1-253-333-8118	
Website	www.systemthree.com	
Email	support@systemthree.com	
Emergency Contact	CHEMTEL (U.S. and CANADA) 1-800-704-9215 CHEMTEL (Outside the U.S.) – Call Collect accepted +1-360-256-7365	

2. Hazard(s) Identification

Classification of substance or mixture/Signal Word	DANGER Acute Toxicity [Inhalation] – Category 4 Skin Corrosion/Irritation – Category 2 Serious Eye Damage/Eye Irritation – Category 2B Skin Sensitization – Category 1B Respiratory Sensitization – Category 1 Specific Target Organ Toxicity (Single Exposure) [Respiratory tract irritation] – Category 3 Specific Target Organ Toxicity (Repeated Exposure) [inhalation] – Category 2	
<u>GHS Label Elements</u> Hazard Pictograms		
Hazard Statements/Classification of substance or mixture	H320 Causes eye irritation. H315 Causes skin irritation. H332 Harmful if inhaled. H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled. H317 May cause an allergic skin reaction. H335 May cause respiratory irritation. H373 May cause damage to organs (Olfactory organs) through prolonged or repeated exposure (inhalation).	
Precautionary statements		
<u>Precautionary Statements</u>	P260 Do not breathe dust/gas/mist/vapours.	

Prevention	<p>P264 Wash with plenty of water and soap thoroughly after handling.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p>
Response	<p>P284 [In case of inadequate ventilation] wear respiratory protection.</p> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor/physician.</p> <p>P314 Get medical advice/attention if you feel unwell.</p> <p>P302+P352 IF ON SKIN (or hair): Wash with plenty of soap and water.</p> <p>P333+P311 If skin irritation or rash occurs: Call a POISON CENTER or doctor/physician.</p> <p>P362+P364 Take off contaminated clothing and wash before reuse.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/attention.</p> <p>P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.</p>
Storage	<p>P403+P233 Store in a well-ventilated place. Keep container tightly closed.</p>
Disposal	<p>P405 Store locked up.</p> <p>P501 Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
Hazards not otherwise classified (HNOC)	None known.

3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
P-MDI	9016-87-9	50 – 75%
Diphenylmethane-4,4'-diisocyanate (MDI)	101-68-8	25 – 50%
1,3-Diazetidine-2,4-dione, 1,3-bis[4-[(4-isocyanatophenyl)methyl]phenyl]-	17589-24-1	1 – 3%
Methylenediphenyl diisocyanate	26447-40-5	3 – 7%
Isocyanic acid, polymethylenepolyphenylene ester, polymer with alpha-hydro-omega-hydroxypoly(oxy-1,2-ethanediyl)	57636-09-6	1 – 3%

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

4. First-Aid Measures

Skin contact	Wash affected areas thoroughly with soap and water. If irritation develops, seek medical attention.
Eye contact	In case of contact with eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.
Ingestion	Rinse mouth and then drink plenty of water. Do not induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

Inhalation Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

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

Notes to physician The most important symptoms and effects are described in the labeling (see section 2) and/or in section 11. Eye irritation, skin irritation, allergic symptoms. Hazards: Symptoms can appear later.
Information on: Diphenylmethane-4,4'-diisocyanate (MDI)
Hazards: Respiratory sensitization may result in allergic (asthma-like) signs in the lower respiratory tract including wheezing, shortness of breath and difficulty breathing, the onset of which may be delayed. Repeated inhalation of high concentrations may cause lung damage, including reduced lung function, which may be permanent. Substances eliciting lower respiratory tract irritation may worsen the asthma-like reactions that may be produced by product exposures.

Specific treatments Specific antidotes or neutralizers to isocyanates do not exist. Treatment should be supportive and based on the judgement of the physician in response to the reaction of the patient.

5. Fire-Fighting Measures

Suitable extinguishing media Water spray, dry powder, carbon dioxide, foam.
Unsuitable extinguishing media None known.
Specific hazards arising from the chemical Hazards during fire-fighting: nitrous gases, fumes/smoke, isocyanate, vapour.
Hazardous decomposition products
Special protective actions for fire-fighters Not available.

Special protective equipment for fire-fighters Fire-fighters should be equipped with self-contained breathing apparatus and turn-out gear.
Further information Keep containers cool by spraying with water if exposed to fire. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

Personal precautions Wear suitable personal protective clothing and equipment. Proper PPE includes: disposable gloves, eye protection and skin protection.
Emergency procedures Clear area. Ensure adequate ventilation.
Methods and materials for containment/cleanup For small amounts: Absorb isocyanate with suitable absorbent material (see 40 CFR, sections 260, 264 and 265 for further information). Shovel into open container. Do not make container pressure tight. Move container to a well-ventilated area (outside). Spill area can be decontaminated with the following recommended decontamination solution:
Mixture of 90% water, 8 % concentrated ammonia, 2% detergent. Add at a 10 to 1 ratio. Allow to stand for at least 48 hours to allow escape of evolved carbon dioxide.
For large amounts: If temporary control of isocyanate vapor is required, a blanket of protein foam or other suitable foam (available from most fire departments) may be placed over the spill. Transfer as much liquid as possible via pump or vacuum device into closed but not sealed containers for disposal.

Environmental precautions Do no discharge into drains/surface waters/groundwater.

7. Handling and Storage

Precautions for safe handling

Provide suitable exhaust ventilation at the processing machines. Ensure thorough ventilation of stores and work areas. Avoid aerosol formation. When handling heated product, vapours of the product should be ventilated, and respiratory protection used. Wear respiratory protection when spraying. Danger of bursting when sealed gastight. Protect against moisture. If bulging of drum occurs, transfer to well ventilated area, puncture to relieve pressure, open vent and let stand for 48 hours before resealing.

Protection against fire and explosion: No explosion proofing necessary.

Precautions/Recommendations for safe/proper storage

Keep away from water. Segregate from foods and animal feeds. Segregate from acids and bases. Segregate from bases.

Suitable materials for containers: Carbon steel (iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4301 (V2).

Further information on storage conditions: Formation of CO₂ and buildup of pressure possible. Keep container tightly closed and in a well-ventilated place. Outage of containers should be filled with dry inert gas at atmospheric pressure to avoid reaction with moisture.

Storage stability:

Storage temperature: 32 – 110°F

Protect against moisture.

8. Exposure Controls/Personal Protection**Occupational Exposure Limits**

Components	Type	Value
Diphenylmethane-4,4'-diisocyanate (MDI)	OSHA PEL	CLV 0.02 ppm 0.2m mg/m ³ ; CLV 0.02 ppm 0.2 mg/m ³
	ACGIH TLV	TWA value 0.005 ppm
P-MDI	OSHA PEL	CLV 0.02 ppm 0.2m mg/m ³ ; CLV 0.02 ppm 0.2 mg/m ³
	ACGIH TLV	TWA value 0.005 ppm
Isocyanic acid, polymethylenepolyphenylene ester (P-MDI)	OSHA PEL	CLV 0.02 ppm 0.2m mg/m ³ ; CLV 0.02 ppm 0.2 mg/m ³
	ACGIH TLV	TWA value 0.005 ppm

Appropriate engineering controls

Provide local exhaust ventilation to maintain recommended P.E.L.

Environmental exposure controls

None available.

Individual protection measures/Personal protective equipment**Eye/face protection**

Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Hand protection

Chemical resistant protective gloves should be worn to prevent all skin contact. Suitable materials may include, chloroprene rubber (neoprene), nitrile rubber (Buna N), chlorinated polyethylene, polyvinylchloride (Pylox), butyl rubber, depending upon conditions of use.

Skin protection

Cover as much of the exposed skin as possible to prevent all skin contact. Suitable materials may include, saran-coated material, depending upon conditions of use.

Respiratory protection

When workers are facing concentrations above the occupational exposure limits they must use appropriate certified respirators. When atmospheric levels may exceed the occupational exposure limit (PEL or TLV) NIOSH-certified air purifying respirators equipped with an organic vapor sorbent and particulate filter can be used as long as appropriate precautions and change out schedules are in place. For emergency or non-routine, high exposure

Special instructions for protection and hygiene

situations, including confined space entry, use a NIOSH-certified full face-piece pressure demand self-contained breathing apparatus (SCBA) or a full face-piece pressure demand supplied-air respirator (SAR) with escape provisions.

Wear protective clothing as necessary to prevent contact. Eye wash fountains and safety showers must be easily accessible. Observe the appropriate PEL or TLV value. Wash soiled clothing immediately. Contaminated equipment or clothing should be cleaned after each use or disposed of.

9. Physical and Chemical Properties

Chemical family	Aromatic Isocyanates
Appearance	Dark liquid
Physical State	
Form	Liquid
Color	Dark amber
Odor	Faint odor, aromatic
Density (Specific Gravity)	1.22 g/cm ³ @ 20°C
Viscosity	200 mPa s @ 20°C
pH	Data not available
Melting point/freezing point	3°C (1 ATM)
Initial boiling point and boiling range	200°C (5 mmHg)
Flash point	220°C, Open Cup
Evaporation rate	Value can be approximated from Henry's Law Constant or vapor pressure
Flammability (solid, gas)	Not flammable
Upper/lower flammability limit (by volume)	
Upper flammability limit (by volume)	For liquids not relevant for classification and labeling.
Lower flammability limit (by volume)	For liquids not relevant for classification and labeling. The lower explosion point may be 5-15 °C below the flash point.
Material VOC	Data not available
Vapor density	Not applicable
Relative density	1.22 @ 25°C
Solubility in water	Reacts with water
Partition coefficient: n-octanol/water	Not applicable
Auto-ignition temperature	>250°C
Decomposition temperature	No decomposition if stored and handled as prescribed/indicated.

10. Stability and Reactivity

Reactivity	None.
Chemical Stability	The product is stable if stored and handled as prescribed/indicated.
Possibility of hazardous reactions	Reacts with water, with formation of carbon dioxide. Risk of bursting. Reacts with alcohols. Reacts with acids. Reacts with alkalines. Reacts with amines. Risk of exothermic reaction. Risk of polymerization. Contact with certain rubbers

and plastics can cause brittleness of the substance/product with subsequent loss in strength.

Conditions to avoid

Avoid moisture.

Incompatible materials

Acids, amines, alcohols, water, alkalines, strong bases, substances/products that react with isocyanates.

Hazardous decomposition products

Carbon monoxide, carbon dioxide, nitrogen oxide, hydrogen cyanide, nitrogen oxides, aromatic isocyanates, gases/vapours.

Other hazards

None known.

11. Toxicological Information

Acute Health Hazard (components)

Assessment of acute toxicity: Inhalation of vapours may cause irritation of the mucous membranes of the nose, throat or trachea, breathlessness, chest discomfort, difficult breathing and reduced pulmonary function. Inhalation exposure well above the PEL may result additionally in eye irritation, headache, chemical bronchitis, asthma-like findings or pulmonary edema. Isocyanates have also been reported to cause hypersensitivity pneumonitis, which is characterized by flu-like symptoms, the onset of which may be delayed.

Component	Result	Species	Dose	Exposure
Diphenylmethane-4,4'-diisocyanate (MDI)	LD50 Oral	Rat	>2,000 mg/kg	-
	LD50 Dermal	Rabbit	>9,400 mg/kg	-
	LC50 Inhalation	Rat	2.0 mg/l (aerosol)	-

Irritation/Corrosion (components)

Assessment of irritating effects: Irritating to eyes, respiratory system and skin. Skin contact may result in dermatitis, either irritative or allergic.

Component	Result	Species	Test	Exposure
Diphenylmethane-4,4'-diisocyanate (MDI)	Skin - Irritating	Rabbit	Draize test	-
	Eyes – Irritating	Rabbit	Draize test	-

Sensitization

Assessment of sensitization: Sensitization after skin contact possible. The substance may cause sensitization of the respiratory tract. As a result of previous repeated overexposures or a single large dose, certain individuals will develop isocyanate sensitization (chemical asthma) which will cause them to react to a later exposure to isocyanate at levels well below the PEL/TLV. These symptoms, which include chest tightness, wheezing, cough, shortness of breath, or asthmatic attack, could be immediate or delayed up to several hours after exposure. Similar to many non-specific asthmatic responses, there are reports that once sensitized an individual can experience these symptoms upon exposure to dust, cold air, or other irritants. This increased lung sensitivity can persist for weeks and in severe cases for several years. Chronic overexposure to isocyanates has also been reported to cause lung damage, including a decrease in lung function, which may be permanent. Prolonged contact can cause reddening, swelling, rash, scaling, or blistering. In those who have developed a skin sensitization, these symptoms can develop as a result of contact with very small amounts of liquid material, or even as a result of vapour-only exposure. Animal tests indicate that skin contact may play a role in causing respiratory sensitization.

Mutagenicity

No information on product itself.

Carcinogenicity

No information on product itself.

Reproductive Toxicity

No information on product itself.

Teratogenicity

No information on product itself.

Specific target organ toxicity (single exposure)

No information on product itself.

Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity: The substance may cause damage to the olfactory epithelium after repeated inhalation. The substance may cause damage to the lung after repeated inhalation. These effects are not relevant to humans at occupational levels of exposure.

Aspiration hazard

No information on product itself.

Potential acute health effects

Eye Contact

Causes severe eye damage and irritation.

Inhalation

Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin Contact

Causes skin irritation.

Ingestion

Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye Contact

No information on product itself.

Inhalation

No information on product itself.

Skin Contact

No information on product itself.

Ingestion

No information on product itself.

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

Potential chronic health effects

General

The isocyanate component is a respiratory sensitizer. It may cause allergic reaction leading to asthma-like spasms of the bronchial tubes and difficulty in breathing. Medical supervision of all employees who handle or come into contact with isocyanates is recommended. Contact may aggravate pulmonary disorders. Persons with history of respiratory disease or hypersensitivity should not be exposed to this product. Pre-employment and periodic medical examinations with respiratory function tests (FEV₁, FVC as a minimum) are suggested. Persons with asthmatic conditions, chronic bronchitis, other chronic respiratory diseases, recurrent eczema or pulmonary sensitization should be excluded from working with isocyanates. Once a person is diagnosed as having pulmonary sensitization (allergic asthma) to isocyanates, further exposure is not recommended.

Carcinogenicity

Assessment of carcinogenicity: A carcinogenic potential cannot be excluded after prolonged exposure to severely irritating concentrations. These effects are not relevant to humans at occupational levels of exposure.
Experimental/calculated data: OECD Guideline 453 rat inhalation 0, 0.2, 1, 6 mg/m³

Mutagenicity

Assessment of mutagenicity: The substance was mutagenic in various bacterial test systems; however, these results could not be confirmed in tests with animals.

Teratogenicity

Assessment of teratogenicity: The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

Developmental effects

The substance did not cause malformations in animal studies; however, toxicity to development was observed at high doses that were toxic to the parental animals.

OECD Guideline 414 rat inhalation 0, 1, 4, 12 mg/m³

NOAEL Mat.: 4 mg/m³

NOAEL Teratog.: 4 mg/m³

Fertility effects

Assessment of reproduction toxicity: Repeated inhalative uptake of the substance did not cause damage to the reproductive organs.

Numerical measures of toxicity

Acute toxicity estimates (ATE_{mix})

Not available.

12. Ecological Information

Ecotoxicity

Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations. Based on long-term (chronic) toxicity study data, the product is very likely not harmful to aquatic organisms. The product may hydrolyse. The test result maybe partially due to degradation products. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Test	Exposure	Species	Result
OECD Guideline 203, static	96 h	Brachydanio rerio	LC ₀ >1,000 mg/l
OECD Guideline 202, part 1, static	24 h	Daphnia magna	EC ₅₀ > 1,000 mg/l
OECD Guideline 201, static	72 h	Scenedesmus subspicatus	EC ₀ 1,640 mg/l
OECD Guideline 209 Aquatic	3 h	Aerobic bacteria from domestic water treatment plant	EC ₅₀ > 100 mg/l

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Poorly biodegradable. The product is unstable in water. The elimination data also refer to products of hydrolysis.

Elimination information

0% BOD of the ThOD (28d) (OECD Guideline 302 C) (aerobic, activated sludge) Poorly biodegradable.

Assessment of stability in water

In contact with water the substance will hydrolyse slowly.

Information on stability in water (Hydrolysis)

T_{1/2} 20 h (25°C)

Bioaccumulative Potential

Significant accumulation in organisms is not to be expected. Bioconcentration factor: 200 (28 d), Cyprinus carpio

Mobility in Soil

Soil/water partition coefficient (KOC)

Not available.

Other adverse effects

The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is not expected.

13. Disposal Considerations

Waste from residues/ unused products

Incinerate or dispose of in a licensed facility. Do not discharge substance/product into sewer system.

Contaminated packaging

DRUMS: Steel drums must be emptied and can be sent to a licensed drum re-conditioner for reuse, a scrap metal dealer or an approved landfill. Do not attempt to refill or clean containers since residue is difficult to remove. Under no circumstances should empty drums be burned or cut open with

gas or electric torch as toxic decomposition products may be liberated. Do not reuse empty containers.

14. Transport Information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

International Transport Regulations

Regulatory information	UN/NA number	Proper Shipping Name	Classes/*PG	Additional Information
DOT		Non-regulated		
TDG		Non-regulated		
IMO/IMDG		Non-regulated		
IATA		Non-regulated		

*PG: Packing group

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

15. Regulatory Information

UNITED STATES

U.S. Federal Regulations

United States – TSCA 12(b) – Chemical export notification: None Required.
United States – TSCA 5(a)2 – Final significant new use rules: Not Listed.
United States – TSCA 5(a)2 – Proposed significant new use rules: Not Listed.
United States – TSCA 5(e) – Substance consent order: Not listed.

Clean Air Act – Ozone Depleting Substances (ODS)

Not available.

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

None.

State – RTK

MA, NJ, PA

P-MDI

MA, NJ, PA

Diphenylmethane-4,4'-diisocyanate (MDI)

NJ

Methylenediphenyl diisocyanate

EPA SARA 302 Extremely Hazardous Substances

None.

EPA SARA 302/304/311/312 Hazardous Chemicals

Acute hazard, Chronic hazard

SARA 313

Form R – Reporting requirements

Product Name	CAS Number
Diphenylmethane-4,4'-diisocyanate (MDI)	101-68-8
P-MDI	9016-87-9

CERCLA Hazardous substances

Component	%	Section 304 CERCLA Hazardous Substance	CERCLA Reportable Quantity (Lbs)	Product Reportable Quantity (Lbs)
Diphenylmethane-4,4'-diisocyanate (MDI); P-MDI			5000	

Reportable quantity for release: 13,157.9 lb

United States inventory (TSCA 8b)

All components are listed or exempted.

CANADA

WHMIS (Canada)

Not available.

Canadian NPRI

None required.

CEPA Toxic substances

None required.

16. Other Information, Including Date of Preparation or Last Revision

HMIS Rating



Date of Preparation

July 10, 2020

Date of Last Revision

January 24, 2020

Revision #

6.0

More Information

1-253-333-8118

Prepared by

System Three Resins Inc.

The information contained herein is based on the data available to us and is believed to be correct. However, System Three Resins, Inc. makes no warranty, expressed or implied, regarding the accuracy of these data or the results to be obtained from the use thereof. System Three assumes no responsibility for injury from the use of the product described herein.

1. Product Identification

Product name	Flotation Foam, Part B	
SDS Number	3700B00	
Product type	Polyol Resin Mixture	
Recommended use of the chemical and restrictions on use	Polyurethane component intended for, but not limited to marine flotation.	
Restrictions	None known	
Manufacturer/Supplier information		
Company name	SYSTEM THREE RESINS, INC.	
Address	8517 Commerce Place Dr NE Lacey, WA 98516 United States	
Telephone	1-253-333-8118	
Website	www.systemthree.com	
Email	support@systemthree.com	
Emergency Contact	CHEMTEL (U.S. and CANADA)	1-800-704-9215
	CHEMTEL (Outside the U.S.) – Call Collect accepted	+1-360-256-7365

2. Hazard(s) Identification

Classification of substance or mixture/Signal Word	No need for classification according to GHS criteria for this product.
Hazards not otherwise classified (HNOC)	No specific dangers known, if the regulations/notes for storage and handling are considered.

3. Composition/Information On Ingredients

Chemical Name	CAS Number	Content (%)
Tris(2-chloro-1-methylethyl)phosphate	13674-84-5	10 – 15%
Propane, 1,1,1,3,3-pentafluoro-	460-73-1	7 – 10%
Cyclohexyldimethylamine	98-94-2	0.3 – 1%

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. Occupational exposure limits, if available, are listed in Section 8.

4. First-Aid Measures

Skin contact	Wash affected areas thoroughly with soap and water.
Eye contact	Wash affected eyes for at least 15 minutes under running water with eyelids held open. Immediate medical attention required.
Ingestion	Rinse mouth and then drink plenty of water. Do not induce vomiting. Immediate medical attention required.
Inhalation	Keep patient calm, remove to fresh air, seek medical attention.

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

Notes to physician	No significant reaction of the human body to the product known. Hazards: No hazards anticipated.
Specific treatments	Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Suitable extinguishing media	Water spray, dry powder, carbon dioxide, foam.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	No particular hazards known.
Hazardous decomposition products	
Special protective equipment for fire-fighters	Fire-fighters should be equipped with self-contained breathing apparatus and turn-out gear.
Further information	Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental Release Measures

Personal precautions	Wear suitable personal protective clothing and equipment. Proper PPE includes: disposable gloves, eye protection and skin protection.
Emergency procedures	Clear area. Ensure adequate ventilation.
Methods and materials for containment/cleanup	Spills should be contained, solidified, and placed in suitable containers for disposal.
Environmental precautions	Do no discharge into drains/surface waters/groundwater.

7. Handling and Storage

Precautions for safe handling	Ensure thorough ventilation of stores and work areas. Protect against moisture. Product should not be mixed with air above atmospheric pressure for leak testing or any other purpose. Use dry nitrogen to transfer or leak test equipment pressurized with product. Protection against fire and explosion: No explosion proofing necessary.
Precautions/Recommendations for safe/proper storage	Segregate from foods and animal feeds. Segregate from acids. Segregate from oxidants. Suitable materials for containers: Carbon steel (iron), High density polyethylene (HDPE), Low density polyethylene (LDPE), Stainless steel 1.4301 (V2). Further information on storage conditions: No special precautions necessary. Avoid extreme heat. Store protected against freezing. Storage stability: Storage temperature: 16 – 27°C

8. Exposure Controls/Personal Protection

Occupational Exposure Limits	No occupational exposure limits known.
Appropriate engineering controls	Provide local exhaust ventilation to control vapours/mists.
Environmental exposure controls	None available.
Individual protection measures/Personal protective equipment	
Eye/face protection	Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.
Hand protection	Chemical resistant protective gloves should be worn to prevent all skin contact.
Skin protection	Standard work clothes and shoes.
Respiratory protection	Wear NIOSH-certified (or equivalent) organic vapour/particulate respirator as needed.
Special instructions for protection and hygiene	Avoid skin contact. Handle in accordance with good industrial hygiene and safety practice. Wear protective clothing as necessary to prevent contact. Avoid inhalation of vapours/mists. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Chemical family	Polyol
Appearance	Dark liquid
Physical State	
Form	Liquid
Color	Amber
Odor	Faint odor, amine-like
Density (Specific Gravity)	9.06 lb/USg (1.09) @ 24°C
Viscosity	350 mPa s @ 24°C
pH	>7.0
Melting point/freezing point	0°C The data given are those of the active ingredient
Initial boiling point and boiling range	29°C (760.000000 mmHg) The data given are those of the active ingredient
Flash point	>93°C, open cup
Evaporation rate	Value can be approximated from Henry's Law Constant or vapor pressure
Flammability (solid, gas)	Not flammable
Upper/lower flammability limit (by volume)	
Upper flammability limit (by volume)	For liquids not relevant for classification and labeling.
Lower flammability limit (by volume)	For liquids not relevant for classification and labeling. The lower explosion point may be 5-15 °C below the flash point.
Material VOC	Data not available
Vapor density	Not applicable
Relative density	1.22 @ 25°C
Solubility in water	Slightly soluble, dispersible when hot
Partition coefficient: n-octanol/water	Unspecified
Auto-ignition temperature	Unspecified
Decomposition temperature	No decomposition if stored and handled as prescribed/indicated.

10. Stability and Reactivity

Reactivity	None.
Chemical Stability	The product is stable if stored and handled as prescribed/indicated.
Possibility of hazardous reactions	No hazardous reactions if stored and handled as prescribed/indicated.
Conditions to avoid	Temperature: < 0 degrees Celsius
Incompatible materials	Acids, oxidizing materials, isocyanates
Hazardous decomposition products	Carbon monoxide, carbon dioxide, nitrogen oxide, hydrogen cyanide
Other hazards	None known.

11. Toxicological Information

<u>Acute Health Hazard</u>	No known acute effects.
<u>Irritation/Corrosion</u>	No irritation is expected under intended use and appropriate handling.
<u>Sensitization</u>	No applicable information available.
<u>Mutagenicity</u>	No applicable information available.
<u>Carcinogenicity</u>	No applicable information available.
<u>Reproductive Toxicity</u>	No applicable information available.
<u>Teratogenicity</u>	No applicable information available.
<u>Specific target organ toxicity (single exposure)</u>	No applicable information available.
<u>Specific target organ toxicity (repeated exposure)</u>	No applicable information available.
<u>Aspiration hazard</u>	No aspiration hazard expected.
<u>Potential acute health effects</u>	None known.
<u>Symptoms related to the physical, chemical and toxicological characteristics</u>	None known.
<u>Delayed and immediate effects and also chronic effects from short and long term exposure</u>	None known.
<u>Potential chronic health effects</u>	
General	No applicable information available.
Carcinogenicity	No applicable information available.
Mutagenicity	No applicable information available.
Teratogenicity	No applicable information available.
Developmental effects	No applicable information available.
Fertility effects	No applicable information available.
<u>Numerical measures of toxicity</u>	
<u>Acute toxicity estimates (ATEmix)</u>	Not available.

12. Ecological Information

Ecotoxicity

Assessment of aquatic toxicity: There is a high probability that the product is not acutely harmful to aquatic organisms. The product has not been tested. The statement has been derived from the properties of the individual components.

Persistence and degradability

Assessment biodegradation and elimination (H2O)

Poorly biodegradable.

Elimination information

Poorly biodegradable.

Bioaccumulative Potential

Does not significantly accumulate in organisms. Product has not been tested for bioaccumulative potential.

Mobility in Soil

Soil/water partition coefficient (KOC)

Not available.

Other adverse effects

Adsorption to solid soil phase is not expected.

13. Disposal Considerations

Waste from residues/ unused products

Incinerate or dispose of in a licensed facility. Do not discharge substance/product into sewer system.

Contaminated packaging

DRUMS: Steel drums must be emptied and can be sent to a licensed drum re-conditioner for reuse, a scrap metal dealer or an approved landfill. Do not attempt to refill or clean containers since residue is difficult to remove. Under no circumstances should empty drums be burned or cut open with gas or electric torch as toxic decomposition products may be liberated. Do not reuse empty containers.

14. Transport Information

The data provided in this section is for information only and may not be specific to your package size or mode of transport. You will need to apply the appropriate regulations to properly classify your shipment for transportation.

International Transport Regulations

Regulatory information	UN/NA number	Proper Shipping Name	Classes/*PG	Additional Information
DOT		Non-regulated		
TDG		Non-regulated		
IMO/IMDG		Non-regulated		
IATA		Non-regulated		

*PG: Packing group

Special precautions for user:

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

15. Regulatory Information

UNITED STATES

U.S. Federal Regulations

United States – TSCA 12(b) – Chemical export notification: None Required.
United States – TSCA 5(a)2 – Final significant new use rules: Not Listed.

	United States – TSCA 5(a)2 – Proposed significant new use rules: Not Listed.
	United States – TSCA 5(e) – Substance consent order: Not listed.
Clean Air Act – Ozone Depleting Substances (ODS)	Not available.
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	None.
California Prop. 65	WARNING: This product can expose you to chemicals including PROPYLENE OXIDE, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov .
	[Other Prop 65 components may be present in the product.]
EPA SARA 302 Extremely Hazardous Substances	None.
EPA SARA 302/304/311/312 Hazardous Chemicals	Non hazardous
SARA 313	None.
Form R – Reporting requirements	
CERCLA Hazardous substances	None.
United States inventory (TSCA 8b)	All components are listed or exempted.
CANADA	
WHMIS (Canada)	Not available.
Canadian NPRI	None required.
CEPA Toxic substances	None required.

16. Other Information, Including Date of Preparation or Last Revision

HMIS Rating

Health	1
Flammability	1
Physical Hazard	1

Date of Preparation	July 2, 2020
Date of Last Revision	January 24, 2020
Revision #	6.0
More Information	1-253-333-8118
Prepared by	System Three Resins Inc.

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