SAFETY DATA SHEET

ROHM & HAAS CHEMICALS LLC

Product name: Coreactant F

Issue Date: 07/31/2020
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ROHM & HAAS CHEMICALS LLC encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. IDENTIFICATION

Product name: Coreactant F

Recommended use of the chemical and restrictions on use
Identified uses: Component of an adhesive

COMPANY IDENTIFICATION
ROHM & HAAS CHEMICALS LLC
Agent for Rohm and Haas Chemicals LLC
400 ARCOLA ROAD
COLLEGEVILLE PA 19426-2914
UNITED STATES

Customer Information Number: 800-258-2436
SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER
24-Hour Emergency Contact: 1 800 424 9300
Local Emergency Contact: 800-424-9300

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with 29 CFR 1910.1200
Flammable liquids - Category 2
Eye irritation - Category 2A
Respiratory sensitisation - Category 1
Skin sensitisation - Category 1
Specific target organ toxicity - single exposure - Category 3

Label elements
Hazard pictograms

Signal word: **DANGER!**

Hazards
Highly flammable liquid and vapour.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause drowsiness or dizziness.

Precautionary statements

Prevention
Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ ventilating/ lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Wash skin thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/ eye protection/ face protection.
In case of inadequate ventilation wear respiratory protection.

Response
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice and/or attention.
If experiencing respiratory symptoms: Call a POISON CENTER/ doctor.
Wash contaminated clothing before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage
Store in a well-ventilated place. Keep container tightly closed.
Store in a well-ventilated place. Keep cool.
Store locked up.

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

Other hazards
No data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature: Polyurethane resin solvent based

This product is a mixture.

Component	CASRN	Concentration
Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol	53317-61-6	74.0 - 76.0 %
Toluene diisocyanate	26471-62-5	<= 0.5 %
Ethyl acetate	141-78-6	24.0 - 26.0 %

Note
Toluene-diisocyanate (TDI) with CAS# 26471-62-5 describes a mixture of toluene-2,4-di-isocyanate and toluene-2,6-di-isocyanate.

4. FIRST AID MEASURES

Description of first aid measures
Inhalation: Move to fresh air. Give artificial respiration if breathing has stopped. Get prompt medical attention. In case of shortness of breath, give oxygen.

Skin contact: Remove contaminated clothing. Wash off with soap and plenty of water. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Consult a physician.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion: Drink 1 or 2 glasses of water. Consult a physician. If vomiting occurs spontaneously, keep airway clear. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed:
Aside from the information found under Description of first aid measures (above) and Indication of immediate medical attention and special treatment needed (below), any additional important symptoms and effects are described in Section 11: Toxicology Information.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Bronchial constriction may develop after extensive exposure to isocyanates, even in individuals who have not been shown to be previously sensitized. MATERIAL IS SEVERELY IRRITATING. It may not be advisable to induce vomiting. Possible mucosal damage may contraindicate the use of gastric lavage.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Use the following extinguishing media when fighting fires involving this material:. Carbon dioxide (CO2). Dry powder. Foam. Water in very large quantities..

Unsuitable extinguishing media: No data available

Special hazards arising from the substance or mixture

Hazardous combustion products: No data available

Unusual Fire and Explosion Hazards: Vapors can travel to a source of ignition and flash back.. Heated material can form flammable or explosive vapors with air.. Closed containers may rupture via pressure build-up when exposed to fire or extreme heat.. During a fire, irritating and highly toxic gases and/or fumes may be generated during combustion or decomposition.. DO NOT permit water to enter containers.. Closed containers may explode when heated or contents contaminated with water..

Advice for firefighters

Fire Fighting Procedures: EXPLOSION HAZARD. Fight advanced fires from a protected location.. Cool closed containers exposed to fire with water spray.. DO NOT permit water to enter containers.. Remain upwind.. Avoid breathing smoke.. Contain run-off..

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Appropriate protective equipment must be worn when handling a spill of this material. See SECTION 8, Exposure Controls/Personal Protection, for recommendations. MATERIAL IS A POTENTIAL SENSITIZER. If exposed to material during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information. Wash contaminated clothing before re-use. Do not take clothing home to be laundered.

Environmental precautions: WARNING: KEEP SPILLS AND CLEANING RUNOFFS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER.

Methods and materials for containment and cleaning up: Eliminate all ignition sources. Evacuate personnel to safe areas. Ventilate the area. Floor may be slippery; use care to avoid falling. Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Sweep up or vacuum up spillage and collect in suitable container for disposal. No sparking tools should be used. Avoid all contact. Avoid breathing vapor. NOTE: Spills on porous surfaces can contaminate groundwater.

7. HANDLING AND STORAGE

Precautions for safe handling: Vapors can be evolved when material is heated during processing operations. See SECTION 8, Exposure Controls/Personal Protection, for types of ventilation required. Use non-sparking tools and grounding cables when transferring. This material is a potential sensitizer. See SECTION 8, Exposure Controls/Personal Protection, prior to handling. Wash after handling and shower at end of work period. Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Conditions for safe storage: Avoid temperature extremes during storage; ambient temperature preferred. Store away from excessive heat (e.g. steampipes,radiators), from sources of ignition and from reactive materials. Residual vapors in empty containers may explode on ignition. DO NOT cut, drill, grind or weld on or near container. Keep away from direct sunlight. Store in a cool, dry, well ventilated place. Keep container tightly closed. Keep away from heat, sparks, flame, and other sources of ignition. Ground all metal containers during storage and handling.
Other data: CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all (M)SDS and label warnings even after container is emptied. Improper disposal or re-use of this container may be dangerous and illegal. Refer to applicable local, state and federal regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value
Toluene diisocyanate	Dow IHG	TWA Inhalable fraction and vapor	0.005 ppm
	Further information: SKIN, DSEN, RSEN: Absorbed via Skin, Skin Sensitizer, Respiratory sensitizer		
	Dow IHG	TLV-C Inhalable fraction and vapor	0.02 ppm
	Further information: SKIN, DSEN, RSEN: Absorbed via Skin, Skin Sensitizer, Respiratory sensitizer		
	OSHA Z-1	C	0.14 mg/m3 0.02 ppm
	ACGIH	TWA Inhalable fraction and vapor	0.001 ppm
	Further information: DSEN: Dermal Sensitization; RSEN: Respiratory sensitization; A3: Confirmed animal carcinogen with unknown relevance to humans; Skin: Danger of cutaneous absorption		
	ACGIH	STEL Inhalable fraction and vapor	0.005 ppm
	Further information: DSEN: Dermal Sensitization; RSEN: Respiratory sensitization; A3: Confirmed animal carcinogen with unknown relevance to humans; Skin: Danger of cutaneous absorption		
Ethyl acetate	Dow IHG	TWA	150 ppm
	Dow IHG	STEL	300 ppm
	ACGIH	TWA	400 ppm
	OSHA Z-1	TWA	1,400 mg/m3 400 ppm
	OSHA P0	TWA	1,400 mg/m3 400 ppm

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Toluene diisocyanate	26471-62-5	toluene diamine	Urine	End of shift	5 µg/g creatinine	ACGIH BEI

Exposure controls
Engineering controls: Use explosion-proof local exhaust ventilation with a minimum capture velocity of 100 ft/min (0.5 m/sec) at the point of vapor evolution. Refer to the current edition of Industrial Ventilation: A Manual of Recommended Practice published by the American Conference of

Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Individual protection measures

Eye/face protection: Use chemical splash goggles (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Skin protection

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): VITON Synthetic Rubber (registered Trademark of Dupont Dow Elastomers) Polyvinyl alcohol 4H Glove (Trademark of Safety 4 A/S of Denmark) Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water.

Other protection: Use chemically resistant apron or other impervious clothing to avoid prolonged or repeated skin contact. Where splashing is possible, full chemically resistant protective clothing (e.g. acid suit) and boots are required.

Respiratory protection: A respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements or equivalent must be followed whenever workplace conditions warrant a respirator's use. None required if airborne concentrations are maintained below the exposure limit listed in Exposure Limit Information. Above the exposure limit: Wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode, OR full-facepiece, airline respirator in the pressure demand mode with emergency escape provision.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	liquid clear
Color	yellow
Odor	solvent-like
Odor Threshold	No data available
pH	Not applicable
Melting point/range	No data available
Freezing point	No data available
Boiling point (760 mmHg)	77 °C (171 °F) Ethyl acetate
Flash point	1.0 °C (33.8 °F) DIN 53213
Evaporation Rate (Butyl Acetate = 1)	No data available
Flammability (solid, gas)	Not Applicable
Lower explosion limit	2.2 % vol Ethyl acetate
Upper explosion limit	11.5 % vol Ethyl acetate
Vapor Pressure	73 mmHg at 20 °C (68 °F) Ethyl acetate
Relative Vapor Density (air = 1)	3 Ethyl acetate

Relative Density (water = 1)	1.17 at 20 °C (68 °F)
Water solubility	insoluble
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	485 °C (905 °F) Ethyl acetate
Decomposition temperature	No data available
Dynamic Viscosity	No data available
Kinematic Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	No data available
Percent volatility	24 - 26 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: No data available

Possibility of hazardous reactions: This material is considered stable. However, keep away from moisture, heat or flame. However, this material can undergo hazardous polymerization. See Hazardous Polymerization for conditions to avoid.
Hazardous polymerization will also occur if contaminated with the following: - water (moisture)

Conditions to avoid: No data available

Incompatible materials: Avoid contact with the following: Strong Oxidizers Acids Water Bases Amines

Hazardous decomposition products: Thermal decomposition may yield the following:. Hydrogen cyanide (hydrocyanic acid). isocyanate monomers. acetaldehyde.

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data is available.

Information on likely routes of exposure
Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute oral toxicity
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
Single dose oral LD50 has not been determined.

Toluene diisocyanate
LD50, Rat, 4,130 mg/kg

Ethyl acetate
LD50, Rabbit, 4,934 mg/kg

Acute dermal toxicity
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
The dermal LD50 has not been determined.

Toluene diisocyanate
LD50, Rabbit, > 9,400 mg/kg

Ethyl acetate
LD50, Rabbit, > 17,900 mg/kg

Acute inhalation toxicity
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
The LC50 has not been determined.

Toluene diisocyanate
Easily attainable vapor concentrations may cause serious adverse effects, even death. Excessive exposure to TDI may cause severe irritation of the upper respiratory tract and lungs, fluid in the lungs, permanent decrease of lung function, neurologic disorders, cholinesterase depression and gastrointestinal distress.

LC50, Rat, 1 Hour, vapour, 0.48 mg/l

LC50, Mouse, 6 Hour, dust/mist, 0.1 mg/l

Ethyl acetate
LC50, Rat, 4 Hour, vapour, > 28.6 mg/l

Skin corrosion/irritation
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
Essentially nonirritating to skin.

Toluene diisocyanate
Prolonged contact may cause severe skin irritation with local redness and discomfort.

Ethyl acetate
Essentially nonirritating to skin.
May cause drying and flaking of the skin.

Serious eye damage/eye irritation
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
May cause moderate eye irritation.

Toluene diisocyanate
May cause severe eye irritation.
May cause moderate corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Ethyl acetate
May cause slight eye irritation.
May cause slight temporary corneal injury.
Vapor may cause eye irritation experienced as mild discomfort and redness.

Sensitization
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
Skin contact may cause an allergic skin reaction.

For respiratory sensitization:
No relevant data found.

Toluene diisocyanate
Skin contact may cause an allergic skin reaction.
Animal studies have shown that skin contact with isocyanates may play a role in respiratory sensitization.

May cause allergic respiratory reaction.
Reexposure to extremely low isocyanate concentrations may cause allergic respiratory reactions in individuals already sensitized.
Asthma-like symptoms may include coughing, difficult breathing and a feeling of tightness in the chest. Occasionally, breathing difficulties may be life threatening.
Effects may be delayed.

Ethyl acetate
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
Available data are inadequate to determine single exposure specific target organ toxicity.

Toluene diisocyanate
May cause respiratory irritation.
Route of Exposure: Inhalation
Target Organs: Respiratory Tract

Ethyl acetate
May cause drowsiness or dizziness.
Route of Exposure: Inhalation
Target Organs: Nervous system

Aspiration Hazard
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
Based on physical properties, not likely to be an aspiration hazard.

Toluene diisocyanate
Based on physical properties, not likely to be an aspiration hazard.

Ethyl acetate
Based on physical properties, not likely to be an aspiration hazard.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
No relevant data found.

Toluene diisocyanate

Based on available data, repeated exposures are not anticipated to cause additional significant adverse effects.

Ethyl acetate
Symptoms of excessive exposure may be anesthetic or narcotic effects; dizziness and drowsiness may be observed.
In animals, effects have been reported on the following organs:
Liver.
Respiratory tract.

Carcinogenicity
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
No relevant data found.

Toluene diisocyanate
An oral study in which high doses of TDI were reported to cause cancer in animals has been found to contain numerous deficiencies which compromise the validity of the study. TDI did not cause cancer in laboratory animals exposed by inhalation, the most likely route of exposure.

Ethyl acetate
For the hydrolysis product: Ethanol when not consumed in an alcoholic beverage is not classifiable as a human carcinogen.

Carcinogenicity

Component	**List**	**Classification**
Toluene diisocyanate	IARC	Group 2B: Possibly carcinogenic to humans
	US NTP	Reasonably anticipated to be a human carcinogen
	ACGIH	A3: Confirmed animal carcinogen with unknown relevance to humans.

Teratogenicity
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
No relevant data found.

Toluene diisocyanate
TDI did not cause birth defects in laboratory animals. Slight effects were observed in the fetus but only at doses which caused toxic effects to the mother.

Ethyl acetate
No relevant data found.

Reproductive toxicity
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
No relevant data found.

Toluene diisocyanate
In animal studies, TDI has been shown not to interfere with reproduction.

Ethyl acetate
No relevant data found.

Mutagenicity
Product test data not available.

Information for components:

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol
No relevant data found.

Toluene diisocyanate
In vitro genetic toxicity studies were negative in some cases and positive in other cases. Animal genetic toxicity studies were negative. Results of a Drosophila study were reported to be weakly positive; however, these positive findings are believed to be due to degradation of TDI in the solvent delivery vehicle.

Ethyl acetate
In vitro genetic toxicity studies were predominantly negative. Animal genetic toxicity studies were negative.

Additional information
No toxicity data are available for this material.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data is available.

General Information
There is no data available for this product.

Toxicity

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol

Acute toxicity to fish
No relevant data found.

Toluene diisocyanate

Acute toxicity to fish
Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).
LC50, Oncorhynchus mykiss (rainbow trout), static test, 96 Hour, 133 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), static test, 48 Hour, 12.5 mg/l, OECD Test Guideline 202 or Equivalent

Acute toxicity to algae/aquatic plants
EC50, Skeletonema costatum (marine diatom), static test, 96 Hour, 3,230 mg/l, OECD Test Guideline 201 or Equivalent
EC50, Chlorella vulgaris (Fresh water algae), static test, 96 Hour, 4,300 mg/l, OECD Test Guideline 201 or Equivalent

Toxicity to bacteria
EC50, activated sludge, Respiration inhibition, 3 Hour, > 100 mg/l, OECD 209 Test

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), static test, 21 d, number of offspring, 1.1 mg/l
LOEC, Daphnia magna (Water flea), static test, 21 d, number of offspring, 2.2 mg/l

Ethyl acetate

Acute toxicity to fish
Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested).
LC50, Pimephales promelas (fathead minnow), 96 Hour, 230 mg/l

Acute toxicity to aquatic invertebrates
EC50, Daphnia magna (Water flea), 24 Hour, 3,090 mg/l, DIN 38412

Acute toxicity to algae/aquatic plants
NOEC, Pseudokirchneriella subcapitata (green algae), 72 Hour, >100 mg/l, OECD Test Guideline 201
EbC50, alga Scenedesmus sp., static test, 48 Hour, Biomass, 3,300 mg/l, Method Not Specified.

Toxicity to bacteria
EC50, Photobacterium phosphoreum, 0.25 Hour, 5,870 mg/l

Chronic toxicity to fish
NOEC, Pimephales promelas (fathead minnow), 32 d, < 9.65 mg/l

Chronic toxicity to aquatic invertebrates
NOEC, Daphnia magna (Water flea), semi-static test, 21 d, number of offspring, 2.4 mg/l

Persistence and degradability

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol

Biodegradability: No relevant data found.

Toluene diisocyanate

Biodegradability: In the aquatic and terrestrial environment, material reacts with water forming predominantly insoluble polyureas which appear to be stable. In the atmospheric environment, material is expected to have a short tropospheric half-life, based on calculations and by analogy with related diisocyanates.

Ethyl acetate

Biodegradability: Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.
10-day Window: Pass
Biodegradation: 100 %
Exposure time: 28 d
Method: OECD Test Guideline 301D or Equivalent

Theoretical Oxygen Demand: 1.82 mg/mg

Bioaccumulative potential

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol

Bioaccumulation: No relevant data found.

Toluene diisocyanate

Bioaccumulation: Reacts with water. In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Ethyl acetate

Bioaccumulation: Bioconcentration potential is low (BCF < 100 or Log Pow < 3).
Partition coefficient: n-octanol/water(log Pow): 0.68 Measured
Bioconcentration factor (BCF): 30 Fish Measured

Mobility in soil

Toluene diisocyanate, oligomeric reaction products with 2,2'-oxydiethanol and propylidenetrimethanol

No relevant data found.

Toluene diisocyanate

In the aquatic and terrestrial environment, movement is expected to be limited by its reaction with water forming predominantly insoluble polyureas.

Ethyl acetate

Potential for mobility in soil is very high (Koc between 0 and 50).
Partition coefficient (Koc): 3 Estimated.

13. DISPOSAL CONSIDERATIONS

Disposal methods: For disposal, incinerate this material at a facility that complies with local, state, and federal regulations. (See 40 CFR 268)

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Resin solution
UN number	UN 1866
Class	3
Packing group	II
Reportable Quantity	Ethyl acetate

Classification for SEA transport (IMO-IMDG):

Proper shipping name	RESIN SOLUTION
UN number	UN 1866
Class	3
Packing group	II
Marine pollutant	No
Transport in bulk according to Annex I or II of MARPOL 73/78 and the IBC or IGC Code	Consult IMO regulations before transporting ocean bulk

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Resin solution
UN number	UN 1866
Class	3
Packing group	II

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Flammable (gases, aerosols, liquids, or solids)
Respiratory or skin sensitisation
Serious eye damage or eye irritation
Specific target organ toxicity (single or repeated exposure)

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
The following components are subject to reporting levels established by SARA Title III, Section 313:

Components	**CASRN**
Toluene diisocyanate	26471-62-5

Pennsylvania
Any material listed as "Not Hazardous" in the CAS REG NO. column of SECTION 2, Composition/Information On Ingredients, of this MSDS is a trade secret under the provisions of the Pennsylvania Worker and Community Right-to-Know Act.

California Prop. 65
WARNING: This product can expose you to chemicals including Toluene diisocyanate, which is/are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Hazard Rating System
HMIS

Health	Flammability	Physical Hazard
2*	3	1

* = Chronic Effects (See Hazards Identification)

Revision
Identification Number: 10045073 / 1001 / Issue Date: 07/31/2020 / Version: 4.4
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

ACGIH	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	ACGIH - Biological Exposure Indices (BEI)
C	Ceiling
Dow IHG	Dow Industrial Hygiene Guideline
OSHA P0	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
OSHA Z-1	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
STEL	Short term exposure limit
TLV-C	Ceiling Limit Value
TWA	Time weighted average

Full text of other abbreviations
AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x%

growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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