

SAFETY DATA SHEET

Section 1. Identification

June, 2018

GHS product identifier : ISO 350A
Product code : ISO 350A
Other means of identification : NA
Product type : Liquid.
Material uses : Urethane Elastomer
Supplier's details : Forsch Polymer Corp
3025 S. Wyandot St.
Englewood, Co. 80110

Non-Emergency phone: (303) 322-9611

e-mail address of person responsible for this SDS : Bill@forschpolymer.com
James@forschpolymer.com

Emergency telephone number (24h/7day) : 303-548-7716

Section 2. Hazards identification

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

OSHA/HCS status

Classification of the substance or mixture

ACUTE TOXICITY (inhalation) - Category 2
SERIOUS EYE DAMAGE! EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (ACUTE) - Category 3
AQUATIC HAZARD (LONG-TERM) - Category 3

GHS label elements Hazard pictograms



Signal Word

: Danger

: Harmful if swallowed or if inhaled.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
Harmful to aquatic life with long lasting effects.

Hazard statements

Section 2. Hazards identification

Precautionary statements

Wear protective gloves: > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL). Wear eye or face protection. In case of inadequate ventilation wear respiratory protection. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Avoid breathing vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. **IF INHALED:** Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or physician. **IF SWALLOWED:** Call a POISON CENTER or physician if you feel unwell. Rinse mouth. **IF ON SKIN:** Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical attention. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification: None known.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture

Ingredient name	%	CAS number
Dicyclohexylmethane-4,4'-diisocyanate	13 - 30	5124-30-1
3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate	1 - 3	4098-71-9

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

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact

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

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

Skin contact

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

Section 4. First aid measures

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

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
Pain or irritation
Redness
- Inhalation** : Adverse symptoms may include the following:
Wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
Irritation
Redness
- Ingestion** : No specific data

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

- Notes to physician** : No specific treatment. Treat symptomatically. Call medical doctor or poison control center immediately if large quantities have been ingested.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Flash point : Closed cup: >150°C (>302°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]

Extinguishing media

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

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical

In a fire or if heated, a pressure increase will occur and the container may burst. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products

Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides

Special protective actions for fire-fighters

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

Special protective equipment for fire-fighters

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

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

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

For emergency responders

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

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

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

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

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

Conditions for safe storage, including any incompatibilities : Store between the following temperatures: 2 to 40°C (35.6 to 104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Dicyclohexylmethane-4,4'-diisocyanate	ACGIH TLV (United States, 6/2013). TWA: 0.054 mg/m ³ 8 hours. TWA: 0.005 ppm 8 hours. OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 5 mg/m ³ , (as CN) 8 hours.
3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate	ACGIH TLV (United States, 6/2013). TWA: 0.005 ppm 8 hours. OSHA PEL (United States, 2/2013). Absorbed through skin. TWA: 5 mg/m ³ , (as CN) 8 hours.

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

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

Individual protection measures

Section 8. Exposure controls/personal protection

Hygiene measures	: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Hand protection	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. > 8 hours (breakthrough time): butyl rubber, Ethyl Vinyl Alcohol Laminate (EVAL)
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Thermal hazards	Not available.

Section 9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Color	: Amber.
Odor	: Slight
Odor threshold	: Not available.
pH	: Not available.
Melting point/Freezing point	: Not available.
Boiling/condensation point	: >200°C (>392°F)
Flash point	: Closed cup: >150°C (>302°F) [DIN 51758 EN 22719 (Pensky-Martens Closed Cup)]
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 1.05
Solubility in water	: Reacts violently with water.

Section 9. Physical and chemical properties

Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: >200°C (>392°F)
Density	: 1.05 g/cm ³ [25°C (77°F)]
Viscosity	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Test	Endpoint	Species	Result
Dicyclohexylmethane-4,4'-diisocyanate	OECD 403 Acute Inhalation Toxicity	LC50 Inhalation Dusts and mists	Rat - Male, Female	0.43 mg/l
	OECD 402 Acute Dermal Toxicity	LD50 Dermal	Rat - Male, Female	>7000 mg/kg
	-	LD50 Oral	Rat - Male, Female	18200 mg/kg
3-isocyanatomethyl-3,5, 5-trimethylcyclohexylisocyanate	OECD 403 Acute Inhalation Toxicity	LC50 Inhalation Dusts and mists	Rat - Male, Female	0.04 mg/l
	OECD 401 Acute Oral Toxicity	LD50 Oral	Rat	4814 mg/kg
	-	-	-	-

Irritation/Corrosion

Product/ingredient name	Test	Species	Result
Dicyclohexylmethane-4,4'-diisocyanate	OECD 404 Acute Dermal Irritation/Corrosion	Rabbit	Skin - Irritant
	OECD 405 Acute Eye Irritation/Corrosion	Rabbit	Eyes - Irritant
3-isocyanatomethyl-3,5, 5-trimethylcyclohexylisocyanate	-	Rabbit	Eyes - Irritant

Conclusion/Summary **Skin**

Section 11. Toxicological information

Dicyclohexylmethane-4,4'-diisocyanate 3-
isocyanatomethyl-3, 5, 5-
trimethylcyclohexylisocyanate

Severely irritating to the skin.
No additional information.

Eyes : Dicyclohexylmethane-4,4'-diisocyanate Irritating to eyes.
3-isocyanatomethyl-3, 5, 5-trimethylcyclohexylisocyanate Irritating to eyes.

Respiratory : Dicyclohexylmethane-4,4'-diisocyanate No additional information.
3-isocyanatomethyl-3, 5, 5-trimethylcyclohexylisocyanate No additional information.

Sensitization

Product/ingredient name	Test	Route of exposure	Species	Result
Dicyclohexylmethane-4,4'-diisocyanate	-	-Guinea skin	Guinea pig	Sensitizing
3-isocyanatomethyl-3, 5, 5-trimethylcyclohexylisocyanate		skinRespiratory	Guinea pig pig	Sensitizing Sensitizing
		Respiratory	Human	Sensitizing

Mutagenicity

Product/ingredient name	Test	Result
Dicyclohexylmethane-4,4'-diisocyanate	Experiment: In vitro Subject: Bacteria Metabolic activation: +/- Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/- Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: +/-	Negative Negative Negative

Conclusion/Summary

Dicyclohexylmethane-4,4'-diisocyanate Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Not available.

Reproductive toxicity

Product/ingredient name	Test	Species	Maternal toxicity	Fertility	Developmental effects
Dicyclohexylmethane-4,4'-diisocyanate	OECD 421 Reproduction/ Developmental Toxicity Screening Test	Rat - Male, Female	Positive	Negative	Negative

Teratogenicity

Section 11. Toxicological information

Product/ingredient name	Test	Species	Result/Result type
Dicyclohexylmethane-4,4'-diisocyanate	OECD 414 Prenatal Developmental Toxicity Study	Rat - Female	Negative - Inhalation

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Dicyclohexylmethane-4,4'-diisocyanate	Category 3	Not applicable.	Respiratory tract irritation
3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and

toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
irritation
redness

effects and also chronic effects from short and long term exposure

Delayed and immediate

Short term exposure : Not available.

Potential immediate effects : Not available.

Potential delayed effects

Long term exposure : Not available.

Potential immediate effects : No specific data.

Section 11. Toxicological information

Potential delayed effects : Not available.

Potential chronic health effects

Product/ingredient name	Test	Endpoint	Species	Result
Dicyclohexylmethane-4,4'-diisocyanate	OECD 413 Subchronic Inhalation Toxicity: 90-day Study	Sub-chronic NOEC Inhalation Dusts and mists	Rat - Male, Female	3 mg/m ³

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

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Other information : Not available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Endpoint	Exposure	Species	Result
Dicyclohexylmethane-4,4'-diisocyanate	EU EC C.2 Acute Toxicity for Daphnia	Acute EC50	48 hours Static	Daphnia	>8.3 mg/l
	EU EC C.3 Algal Inhibition Test	Acute EgC50	72 hours Static	Algae	>5 mg/l
	EU EC C.1 Acute Toxicity for Fish	Acute LC50	96 hours Static	Fish	>8.1 mg/l
	EU EC C.3 Algal Inhibition Test	Chronic NOECr	72 hours Static	Algae	0.31 mg/l
3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate	-	Acute EC50	72 hours	Algae	118.7 mg/l
	EU EC 88/302/EC DIN 38412 (Lumistox test)	Acute EC50	3 hours	Bacteria	263 mg/l
	DIN 38412 (Lumistox test)	Acute EC50	24 hours	Daphnia	83.7 mg/l
	DIN 38412 (Lumistox test)	Acute LC50	48 hours	Fish	1.8 mg/l
	OECD	Chronic NOEC	21 days	Daphnia	3 mg/l

Persistence and degradability

Product/ingredient name	Test	Period	Result
Dicyclohexylmethane-4,4'-diisocyanate	EU	28 days	0 %
3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate	EU Tested according to Directive 92/69/EEC	28 days	0 %

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Dicyclohexylmethane-4,4'-diisocyanate	-	-	Not readily
3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate	-	-	Not readily

Bioaccumulative potential

Not available.

Mobility in soil

Not available.

Other adverse effects

Other ecological information : No known significant effects or critical hazards.

BOD5 Not Determined

COD Not Determined

TOC Not Determined

Section 13. Disposal considerations

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

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14. Transport information

Proper shipping name

DOT : Not regulated.

TDG : Not regulated.

IMDG : Not regulated.

IATA : Not regulated.

Section 14. Transport information

Regulatory information	UN number	Classes	PG* Label	Additional information
DOT Classification	Not regulated.	-	-	-
TDG Classification	Not regulated.	-	-	-
IMDG Classification	Not regulated.	-	-	-
IATA Classification	Not regulated.	-	-	-

PG* : Packing group

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product

United States Regulations

TSCA 8(b) inventory : All components are listed or exempted.

TSCA 5(a)2 final significant new use rule (SNUR) : No ingredients listed.

TSCA 5(e) substance consent order : No ingredients listed.

TSCA 12(b) export notification : No ingredients listed.

SARA 311/312 : Immediate (acute) health hazard

	<u>Product name</u>	<u>Concentration %</u>
Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	: Dicyclohexylmethane-4,4'-diisocyanate	14.624
	3-isocyanatomethyl-3,5, trimethylcyclohexylisocyanate	2.265 5-

Clean Air Act - Ozone Depleting Substances (ODS) : EPCRA Section 313 (40 CFR 372) CERCLA (Comprehensive Environmental Response, Compensation and Liability Act): 4,4-Methylene diphenyl diisocyanate (CAS 101-68-8) has a 5,000 lb. RQ (reportable quantity). Any spill or release above the RQ must be reported to the National Response Center (800-424-8802).

This product does not contain nor is it manufactured with ozone depleting substances.

	<u>Product name</u>	<u>Concentration %</u>
SARA 313 Form R - Reporting requirements	: Dicyclohexylmethane-4,4'-diisocyanate	14.624
	3-isocyanatomethyl-3,5, trimethylcyclohexylisocyanate	2.265 5-

Section 15. Regulatory information

	<u>Ingredient name</u>	<u>%</u>	<u>Section 304 CERCLA Hazardous Substance</u>	<u>CERCLA Reportable Quantity (Lbs)</u>	<u>Product Reportable Quantity (Lbs)</u>
CERCLA Hazardous substances	Dicyclohexylmethane-	14.624	Listed	No RQ assigned	
	4,4'-diisocyanate 3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate	2.265	Listed	No RQ assigned	

State regulations

PENNSYLVANIA - RTK

: Dicyclohexylmethane-4,4'-diisocyanate, 3-isocyanatomethyl-3,5,5-trimethylcyclohexylisocyanate

California Prop 65

: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

Canadian regulations

CEPA DSL

: At least one component is not listed.

WHMIS Classes

Class D-2A: Material causing other toxic effects (Very toxic).

Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Brazil Regulations

Classification system used

: Norma ABNT-NBR 14725-2:2012

ROHS: Compliant

International lists

: **Australia inventory (AICS):** All components are listed or exempted.

China inventory (IECSC): At least one component is not listed.

Japan inventory: All components are listed or exempted.

Korea inventory: At least one component is not listed.

Malaysia Inventory (EHS Register): Not determined.

New Zealand Inventory of Chemicals (NZIoC): At least one component is not listed.

Philippines inventory (PICCS): At least one component is not listed.

Taiwan inventory (CSNN): Not determined.

Section 16. Other information

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

Health	2
Flammability	1
Physical hazards	1
Personal protection	

The customer is responsible for determining the PPE code for this material.

Section 16. Other information

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

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



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

Further information

Date of issue June, 2018

® Indicates information that has changed from previously issued version.

Notice to reader

While the information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behavior of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behavior should be determined by the user and made known to handlers, processors and end users.

SAFETY DATA SHEET

Preparation Date : June, 2018

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Identifier

Product Name AMN 680B

Other means of identification

Chemical Family Aromatic diamine blend
Formula $(C_2H_5)_2(CH_3)C_6H(NH_2)_2$

Recommended use of the chemical and restrictions on use

General function Curing chemical.
Uses advised against No information available

Company manufacture Forsch Polymer Corp.
3025 S. Wyandot st.
Englewood, Co 80110

For Non-Emergency 303-322-9611

Email forschpolymerco@aol.com

Emergency telephone number

Emergency Telephone Numbers 303-548-7716

2. HAZARDS IDENTIFICATION

Classification

OSHA Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute Toxicity - Oral	Category 4
Acute Toxicity - Dermal	Category 4
Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (repeated exposure)	Category 2
Acute aquatic toxicity	Category 1
Chronic aquatic toxicity	Category 1

Label elements

Emergency Overview

Signal Word: Warning

Hazard Statements

Harmful if swallowed

Harmful in contact with skin

Causes serious eye irritation

May cause damage to organs through prolonged or repeated exposure

Very toxic to aquatic life with long lasting effects



Appearance Liquid

Color Clear. Yellow.

Odor Pungent

Prevention

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Wear protective gloves/protective clothing/eye protection/face protection
 Do not breathe dust/fume/gas/mist/vapors/spray
 Avoid release to the environment

Response

Get medical advice/attention 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 eye irritation persists: Get medical advice/attention
 IF ON SKIN: Wash with plenty of soap and water
 Call a POISON CENTER or doctor/physician if you feel unwell
 Wash contaminated clothing before reuse
 IF INHALED: Move to fresh air.
 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell Rinse mouth
 Collect spillage

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Other Information

Unknown Acute Toxicity 2.5% of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature of the preparation 3.1. Substances.

Component	CAS-No	Weight %
Diethyltoluenediamine	68479-98-1	30 – 95%
2,2,4 Trimethyl – 1,3 Pentanediol Diisobutyrate	6846-50-0	5 – 50%

Note: The exact concentrations of the above listed chemicals are being withheld as a trade secret.

4. FIRST AID MEASURES

First aid measures

Eye contact	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Skin Contact	Remove contaminated clothing and shoes. After contact with skin, wash immediately with plenty of water. Wash clothing before reuse. Seek medical advice.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, apply artificial respiration. Seek medical advice.

Exposure Guidelines A*

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Engineering Controls

controls

Ensure adequate ventilation, especially in confined areas. See Extended Safety Data Sheet.

Individual protection measures, such as personal protective equipment

Eye/face Protection Chemical goggles or face shield with safety glasses.

Skin Protection DERMAL PROTECTION: Dermal exposure is considered the primary route of exposure. BODY: A protective apron or suit such as polyethene tyvek or equivalent should be used to minimize exposure from splashes.

Respiratory protection Approved organic vapor respirator when exposed to vapors from heated material. Approved supplied-air respirator, in case of emergency.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquid
Color	Clear. Yellow.Amber-Dark
Odor	Pungent.
Odor Threshold	No information available
Molecular Weight	No information available
pH	Not available
Melting point/freezing point	No information available
Boiling Point/Range	308.3 °C / 587 °F (1013 hPa)
Flash Point	169 °C / 336 (PMCC)
Evaporation Rate	No information available
Flammability (solid, gas)	No information available
Flammability Limit in Air	
Upper flammability limit:	No information available
Lower flammability limit:	No information available
Vapor Pressure	information available
Vapor Density	0.000971 Pa (25°C) 6.2
Relative density	1.02 (20°C)
Solubility(ies)	
Water Solubility	1% (20°C)
Solubility in other solvents	No information available
Partition coefficient	1.16 (25 °C)
Autoignition temperature	No information available
Decomposition temperature	No information available
Viscosity, kinematic Dynamic viscosity	No information available 286 mPa.s (20°C)
Explosive Properties	N o n e
Oxidizing Properties	N o n e

10. STABILITY AND REACTIVITY

Reactivity Hazard	No data available
Stability	Stable under normal conditions.
Hazardous Reactions	No hazardous reaction expected under normal handling.
Hazardous Polymerization	None under normal processing.

Conditions to Avoid Exposure to air.
 Materials to avoid Strong acids. Strong oxidizing agents.
 Hazardous decomposition products Carbon oxides. Nitrogen oxides (NOx).

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation Not an expected route of exposure.
 Eye contact Irritating to eyes.
 Skin Contact Harmful if absorbed through skin.
 Ingestion Harmful if swallowed.

Potential Health Effects

Acute Effects

Skin corrosion/irritation Skin irritation: Slightly irritating but not sufficient for classification.
 Serious eye damage/eye irritation Eye irritation: Irritating to eyes. (rabbit).
 irritation Respiratory irritation : No data available
 Sensitization Not sensitizing. (guinea pig).

Chronic Effects

Mutagenic Effects In vitro mutagenicity test: Positive and negative results in bacterial and mammalian cells in the presence of metabolic activation. In vivo mutagenicity tests: Mouse micronucleus test • negative. Dominant lethal test, rat, negative.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	ACGIH Carcinogens	IARC	NTP	OSHA Carcinogens
Diethyltoluenediamine	68479-98-1	NL	NL	NL	NL
2,2,4 Trimethyl – 1,3 Pentanediol Diisobutyrate	6846-50-0	NL	NL	NL	NL

Reproductive Effects No effect on reproductive organs in repeated dose studies in rats.
 STOT - single exposure No information available.
 STOT - repeated exposure Causes damage to organs through prolonged or repeated exposure.
 Chronic Effects A two year feeding study in rats showed DETDA cause effects in the pancreas, liver, thyroid and eyes. An increase in the number of tumors in the liver and thyroid of male rats and in the liver and possibly mammary gland of female rats was found.
 Target Organ Effects Pancreas.
 Aspiration hazard No information available.

Numerical measures of toxicity

Product Information

Unknown Acute Toxicity No information available
 The following values are calculated based on chapter 3.1 of the GHS document .
 ATEmix (oral) 757 mg/kg
 ATEmix (dermal) 1128 mg/kg
 LD50 Oral: Rat Oral LD50: 738 mg/kg
 LD50 Dermal: Rabbit Dermal LD50: > 2000 mg/kg

Component Information

No information available

Component	Rat Oral LD50 :	Rabbit Dermal LD50 :	Rat Inhalation LC50:
Diethyltoluenediamine	738 mg/kg	>2000 mg/kg	NA
2,2,4 Trimethyl – 1,3 Pentanediol Diisobutyrate 6846-50-0	N/A	NA	N/A

12. ECOLOGICAL INFORMATION

Ecotoxicity

Very toxic to aquatic life with long lasting effects

Component	Freshwater Algae EC50/72h :	Freshwater Fish LC50/96h	Water Flea EC50/48h :
Diethyltoluenediamine	104 mg/l - Algae EC10/72h : 54 mg/l	> 104 mg/l - Fish LC50/48h : 200 mg/l	5.8 mg/l - Water Flea LC50/48h : 0.5 mg/l
2,2,4 Trimethyl – 1,3 Pentanediol Diisobutyrate 6846-50-0	NA	6mg/L	1.46mg/L

Persistence/Degradability Not readily biodegradable. Photodegradation: T1/2. Air: 1.484. hour. (calculated).

Bioaccumulation/ Accumulation No information available.

Mobility in Environmental Media The substance is expected to partition primarily to soil and water. Koc =. 32-551 l/kg (QSAR estimate). Henry's law constant =. 0.000266. (20⁰). (QSAR estimate).

Other adverse effects No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Method Dispose in a safe manner in accordance with local/national regulations. Absorb and incinerate.

Contaminated Packaging Do not reuse container.

14. TRANSPORT INFORMATION

DOT



Proper Shipping Name Diethyltoluenediamine
 Hazard Class 9
 UN No. UN3082
 Packing Group III

IMDG/IMO

IMO Class 9
 Packing Group III
 UN-No 3082
 IMO Labelling and Marking 9 + Marine Pollutant Marking
 Proper Shipping Name Environmentally hazardous substance liquid,N.O.S. (Diethyltoluenediamine)
 EmS F-A , S-F
 Marpol -Annex II Not determined
 Marpol - Annex III Marine Pollutant
 Transport Description UN 3082 Environmentally hazardous substance liquid,N.O.S. (Diethyltoluenediamine), 9, III,
 Marine pollutant

IATA/ICAO

IATA/ICAO Class 9
 Packing Group III
 UN-No 3082
 IATA/ICAO Labelling/Marking 9 + 'Environmentally hazardous substance' mark
 Passenger Aircraft Maximum net quantity per package: 450 L
 Cargo aircraft only Maximum net quantity per package: 450 L
 Proper shipping name Environmentally hazardous substance liquid,N.O.S. (Diethyltoluenediamine)
 Transport Description UN 3082 Environmentally hazardous substance liquid,N.O.S. (Diethyltoluenediamine), 9, III

15. REGULATORY INFORMATION

International Inventories	TSCA	DSL	NDSL	AICS	EINECS	ELINCS	ENCS	ROHS	PICCS	IECSC	NZIoC
AMN 680B	X	X	-	X	X	-	X	X	X	X	X

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Reportable and Threshold Planning Quantities

The following components have RQs and/or TPQs under SARA and/or CERCLA

State Right-to-Know

This product contains the following chemicals regulated in the states listed below. This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

California Prop 65: To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

16. OTHER INFORMATION				
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NFPA	Health 2	Flammability 1	Instability 0	Physical Hazards -
HMIS	Health 2	Flammability 1	Physical Hazards 0	

Preparation Date : May 2015
Revision Date: May 2015

Disclaimer:

The information contained herein is accurate to the best of our knowledge. The Company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances_

End of Safety Data Sheet