Safety Data Sheet

Product Name: Z-8200B
Date: 1/22/2019
Supersedes: 7/18/2017

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Z-8200B - ISO
Chemical/Family Name: Aliphatic Polyisocyanate Mixture
Trade Name: Polyurethane Compound

2. HAZARDS IDENTIFICATION

Emergency Overview
HMIS Classification *(1=slight hazard, 4=severe hazard)*

Health	3	Fire	1	Reactivity	1	Personal Protection	C

GHS Classification *GHS Classification Scale (1= severe hazard; 4= slight hazard)*

Health	**GHS Classification Physical**	**GHS Classification Environmental**
Acute toxicity Oral Cat 4 Respiratory sensitization Cat 1 Skin sensitization Cat 1 STOT SE Cat 3 Respiratory Sys STOT RE Inhalation Cat 2 Lungs		

GHS Label elements
Signal Word Danger
Route of Exposure Skin, inhalation
Pictograms

Hazard Statements
H332 Harmful if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H315+H320 Causes skin and eye irritation.
H317 May cause allergic skin reaction (rash).
Can react with water and other substances to cause pressurization of closed containers if contaminated.
Precautionary Statements
P102 Keep out of reach of children.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing fumes, mist, vapor.
P262 Do not get in eyes, on skin, or on clothing.
P271 Use only with adequate ventilation.
P280 Wear protective gloves.
P284 Wear respiratory protection.
P264 Wash thoroughly after handling.
P270 Do not eat, smoke or drink when using this material.
P232 Protect from moisture.
P233 Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. If container is exposed to high heat, it can be pressurized and possibly rupture. Isocyanates react slowly with water to form CO_2 gas. This can cause sealed containers to expand and possibly rupture.
Exercise reasonable care and cleanliness. **Storage Temperatures:** 25-50C (77-122F). Condition material to 40-60C (100-140F) before using. **Threshold Limit Value:** None established, 0.005 ppm is recommended. 0.010 ppm is the ceiling TLV by OSHA and 0.005 ppm is the TWA TLV from ACGIH for Dicyclohexylmethane-4-4''-diisocyanate.

Routes of Entry: At room temperature by skin absorption. At high temperatures or if the material is atomized, by inhalation and skin absorption.

Signs and Symptoms of Exposure:

Eyes: Redness, irritation, tearing, burning sensation. **Skin:** Rash, redness, itching. **Inhalation:** Irritation of the respiratory tract, runny nose, sore throat, coughing and reduction of lung function. Hypersensitivity, indicated by asthmatic reaction is possible in some individuals. Smarting and weeping of the nose and throat indicate that the diisocyanate concentration in the air is above acceptable limits.

Acute Effects of Overexposure:

Inhalation: Irritation of the respiratory tract, runny nose, sore throat, coughing and reduction of lung function. Hypersensitivity, indicated by asthmatic reaction is possible in some individuals. Smarting and weeping of the nose and throat indicate that the diisocyanate concentration in the air is above acceptable limits. Once sensitized an individual may react allergically to airborne levels below the exposure limits. **Skin:** Prolonged or repeated contact may cause irritation, redness, swelling and dermatitis. Some individuals may become hypersensitized. Once sensitized an individual may react allergically to airborne levels below the exposure limits. **Eyes:** Liquid and vapors are irritating. **Ingestion:** Irritation and burning of mouth, throat and stomach.

Chronic Effects of Exposure: Some individuals may become hypersensitized and react allergically with dermatitis or asthma when exposed to airborne levels below the exposure limits.

Medical Conditions Aggravated by Exposure: Dermatitis, asthma, respiratory ailments, skin conditions.

Carcinogenicity: This product and its constituents are not listed as carcinogens by IARC, NTP or regulated as carcinogens by OSHA at this time.

3. COMPOSITION / INGREDIENT INFORMATION

Component	CAS #	%	Exposure limits (source)
Dicyclohexylmethane-4-4'-Diisocyanate	5124-30-1	20-40	0.005 ppm (3)
Aliphatic polyisocyanate	trade secret	60-80	n/e (5)

Source of Exposure Limit Data: 1.ACGIH Threshold Limit Values 2.Federal OSHA Permissible exposure limit 3.DA Exposure Guidelines 4.Chemical Manufacturer Recommended Guidelines 5.None Established

Abbreviations: n/a - not applicable, n/d - not determined

4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. **Inhalation:** P304+P340 Remove person to fresh air and keep comfortable for breathing. P313 Get medical advice/attention. If not breathing give artificial respiration. Treat asthma or respiratory irritation symptomatically.

Ingestion: P313 Get medical advice/attention. Do not give anything by mouth to an unconscious person.

Eye Contact: P305+P351+P338 Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P313 Get medical attention. **Skin Contact:** P306+P360 Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Remove contaminated clothing. Wash affected areas thoroughly, with soap and water. Cover affected area with polyethylene glycol (300-500 mw.) or glycerin and wash again with soap and water. Apply moisturizing cream. P310 Call Poison Center or physician if irritation persist. Treat dermatitis symptomatically. Wash clothing before reusing.

5. FIRE AND EXPLOSION DATA

Flash Point: >395 F (202 C) TCC **Flammable Limits in Air % Volume:** Upper: n/a, Lower: n/a

Extinguishing Media: Foam, CO_2, or Dry Chemical

Unusual Fire and Explosion Hazards: During a fire, diisocyanate vapors and other irritating, highly toxic gasses may be generated by thermal decomposition or combustion. Extremely high temperatures may cause closed containers to pressurize resulting in explosive rupture. **Special Fire Fighting Procedures:** Fire fighters should wear full emergency equipment including self-contained breathing apparatus. Use cold water to cool fire-exposed containers.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken in Case Material is Released or Spilled: Remove unnecessary personnel. Ventilate area. Equip clean-up crew with appropriate protective gear. Leaks should be stopped and spill dyked to control spreading. Cover spill with absorbent material such as Zip-Zorb (activated clay), diatomaceous earth, or saw dust. Sprinkle on a decontaminating solution of 25% household ammonia, 73% water, and 2% detergent. Allow to react for 15 to 30 minutes, collect in containers, add more decontamination solution, cover loosely. Wash down area with soap and water, rinse. **Do not flush to sewers!**

7. HANDLING AND STORAGE

Precautions to be Taken in Storage and Handling: Store in tightly closed containers to prevent moisture contamination. Do not reseal if contamination is suspected. If container is exposed to high heat, it can be pressurized and possibly rupture. Diisocyanates react slowly with water to form CO_2 gas. This can cause sealed containers to expand and possibly rupture. Avoid contact with skin and eyes. This material may crystallize at storage temperatures below 15C (50F). Before using, melt crystals and mix material by warming drum to 30-60C (86-140F) and rolling the drum. When mixing, avoid inclusion of moist air. **Storage Temperature:** 77F (25C) / 122F (50C) **Shelf Life:** 12 months @ 77F (25C)

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Eye Protection: Liquid chemical goggles or full face screen. Contact lenses should not be worn.
Skin Protection: Rubber Gloves, aprons and other protective clothing as required to prevent contact. Remove any contaminated clothing and wash before use. Routinely wash hands, arms and face with soap and water after handling. Do not smoke or eat until hands and face have been washed.
Ventilation and Respiratory Protection: Ventilate as required to maintain diisocyanate concentrations below 0.005 ppm. At room temperature general mechanical ventilation is adequate, at elevated temperatures additional ventilation may be required. An organic vapor respirator may be used for short periods as supplemental protection at levels below the exposure level. At exposure levels above exposure limits a supplied air respirator is required due to the poor warning properties of this product. **Other:** Safety showers and eye wash stations should be available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear liquid
Color	clear
Odor	mild
Boiling Range	decomposes over 150C
Melting Point	sets to glass <0C. 5-40% of the material may crystallize at temps less than 15C.
Evaporation Rate *BuAcet=1*	n/a
Vapor Pressure	1 x 10^{-3} mm Hg @ 68F (20C)
Vapor Density (air=1)	heavier than air
Weight per Gallon	9.13
Specific Gravity	1.10
Solubility in Water (%)	insoluble, reacts with water
Percent Volatile	negligible

10. STABILITY AND REACTIVITY

Stability: Stable under ordinary conditions. **Conditions to Avoid:** High heat, contamination. **Incompatibility:** Water, amines, strong bases, alcohols. **Hazardous Polymerization:** Will not occur under normal conditions. **Hazardous Decomposition Products:** By high heat, fire: Diisocyanate vapors, CO, CO_2, oxides of nitrogen, traces of HCN.

11. TOXICOLOGICAL INFORMATION

Dicyclohexylmethane-4-4'-Diisocyanate CAS 5124-30-1 LD50 Oral rat 1065 mg/kg, LD50 Dermal rabbit 10000 mg/kg, LC50 Inhalation rat 4h 434 mg/m^3, Eye rabbit mild reversible irritation, Skin guinea pig irritation and potent skin sensitizer.

12. ECOLOGICAL INFORMATION

Dicyclohexylmethane-4-4'-Diisocyanate CAS 5124-30-1 LC50 Fish Danio rerio 96h 1.2 mg/l.
This material reacts slowly with water and is not expected to accumulate in the environment.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: If discarded in its purchased form, this product is not hazardous waste either by listing or by characteristic. However, processing, use or contamination of this product may change its hazardous waste status. Under RCRA, it is the responsibility of the product user to determine, at the time of disposal, whether a material is a hazardous waste. State and local disposal regulations may differ from federal disposal regulations. Dispose in accordance with all federal, state, and local waste disposal laws and regulations. Incineration is the preferred method.

14. TRANSPORT

DOT Shipping Name	none
Technical Shipping Name	Z-8200 Part B ISO, (aliphatic polyisocyanate)
DOT Hazard Class	not regulated
UN/NA Number	none
NMFC Item	Plastic material liquid, NMFC-156240 Class 60

15. REGULATORY

Chemical Inventories: All components of this mixture are listed in the TSCA inventory.
SARA III 313/EPCRA 313: CAS 5124-30-1 component listed in diisocyanate category N120.
For details on regulatory requirements you should contact the appropriate agency in your state.

16. OTHER

This data is offered in good faith as typical values and not as a product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. No warranty, either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. The information on this data sheet is only to assist in the safe handling of this material, and may contain trade secrets, which may not be divulged to anyone except the users of this material and health care and hygiene professionals as required for its safe use. No license or permission to infringe any patent or breach any trade secret is given.

Safety Data Sheet

Product Name: Z-8200HGA
Date: 10/15/2015
Supersedes: None

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Z-8200HGA
Chemical/Family Name: Polypropylene glycol, polyester polyol, and additive mixture
Trade Name: Polyurethane Compound

2. HAZARDS IDENTIFICATION

Emergency Overview
HMIS Classification *HMIS Classification Scale (1= slight hazard, 4= severe hazard)*

Health 2	Fire 1	Reactivity 0	Personal Protection C

GHS Classification *GHS Classification Scale (1= severe hazard, 4= slight hazard)*

Health	**GHS Classification Physical**	**GHS Classification Environmental**
Acute Toxicity, Oral: Category 4 Skin Irritation Category: 2 Reproductive Toxicity: Category 1		

GHS Label elements
Pictograms

Signal Word Danger
Hazard Statements
H360 May damage fertility or the unborn child.
H315 + H320 Causes skin and eye irritation.
Precautionary statements
P102 Keep out of reach of children.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust, fumes, gas, mist, vapor, spray.
P271 Use only with adequate ventilation.
Avoid skin and eye contact.
P280 Wear protective gloves.
P284 Wear respiratory protection.
P264 Wash thoroughly after handling.
P270 Do not eat, smoke or drink when using this material.
Exercise reasonable care and cleanliness.
P232 Protect from moisture.
Storage temperatures 25-50C (77-122F) Condition material to 30-60C (86-140F) before using.
Mix well under dry atmosphere before using.
P273 Avoid release to the environment.
Threshold Limit Value: Not established by ACGIH or OSHA
Routes of Entry: At room temperature, by skin absorption or ingestion. If heated or atomized, by inhalation.
Signs and Symptoms of Exposure:

Eyes: Redness and irritation. **Skin:** Rash, redness. **Ingestion:** Nausea, irritation of digestive track. Symptoms may include inflammation of mouth, esophagus, stomach and small intestine. **Inhalation:** Irritation of respiratory system.

Acute Effects of Overexposure:

Eye Contact: May cause severe eye irritation.

Ingestion: May cause inflammation of mouth, esophagus, stomach and small intestine.

Skin Contact: May cause severe skin irritation. May cause an allergic skin reaction in some individuals.

Skin Absorption: Slightly toxic by skin absorption.

Inhalation: Airborne aerosols or vapors from heated material may cause severe respiratory system irritation.

Chronic Effects of Exposure: Chronic dermatitis, organo-mercury compounds can cause damage to the central nervous system, kidneys and digestive system, symptoms include fatigue, depression, tremors, headaches, emotional disturbances, digestive system irritation, vomiting and lower back pain. Others unknown,

Conditions Aggravated by Exposure: Respiratory ailments, dermatitis, other conditions unknown.

Carcinogenicity: This product and its constituents are not listed as carcinogens by IARC, NTP or regulated as carcinogens by OSHA at this time. **Routes of Entry:** At room temperature primary routes of entry are ingestion or skin absorption. If the material is heated or atomized the vapors or aerosol may cause exposure via inhalation.

3. COMPOSITION / INGREDIENT INFORMATION

Component	CAS #	%	Exposure limits (source)
Polyester Resin	n/a	40-60	none (5)
Polyether Polyol	n/a	35-55	none (5)
Phenylmecuric-carboxylate	26545-49-3	< 0.5	0.1 mg/M3 CEL (1,2)

Source of Exposure Limit Data: 1.ACGIH Threshold Limit Values 2.Federal OSHA Permissible exposure limit 3.DA Exposure Guidelines 4.Chemical Manufacturer Recommended Guidelines 5.None Established

Abbreviations: n/a - not applicable, n/d - not determined

4. FIRST AID MEASURES

Inhalation: P304 + P340 Remove person to fresh air and keep comfortable for breathing. P313 Get medical advice/attention. If not breathing give artificial respiration.

Ingestion: P313 Get medical advice/attention. Do not give anything by mouth to an unconscious person.

Eye Contact: P305+P351+P338 Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P313 Get medical attention.

Skin Contact: P306 + P360 Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. If irritation persists see physician.

5. FIRE AND EXPLOSION DATA

Flash Point: 350 F (175 C) TCC

Flammable Limits in Air % Volume: Upper: not determined. Lower: not determined

Extinguishing Media: Foam, CO_2, or Dry Chemical

Unusual Fire and Explosion Hazards: In a fire, do not breathe smoke when burning.

Special Fire Fighting Procedures: Fire fighters should wear full emergency equipment including self-contained breathing apparatus. Do not direct solid stream of water or foam into hot, burning pools, this may cause frothing and increase fire intensity.

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in Case Material is Released or Spilled: Contain spills with dams of absorbent material such as Zip Zorb. Absorb material and shovel into drums. Use appropriate safety equipment. **Do not flush to sewers!**

7. HANDLING AND STORAGE

Precautions to be taken in Storage and Handling:

Avoid skin and eye contact. Avoid breathing vapors if generated. Exercise reasonable care and cleanliness.

Storage Temperatures: <105F Condition material to 65-100F before using. Mix well under dry atmosphere before using.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Eye Protection: Protection as required to prevent contact during handling: safety glasses, splash goggles, face shield.

Skin Protection: Rubber gloves, aprons and other protective clothing as required to prevent contact. Remove any contaminated clothing and wash before use. Routinely wash hands, arms and face with soap and water after handling. Do not smoke or eat until hands and face have been washed.

Ventilation and Respiratory Protection: Good room ventilation is required. General mechanical ventilation is normally satisfactory. Use organic vapor respirator or supplied air respirator where supplemental protection is needed. Follow OSHA regulations when using personal protective equipment. **Other:** Eye wash, safety shower.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear liquid
Color	slight yellow tint
Odor	mild
Boiling Range	decomposes over 150C
Melting Point	super cools, sets to glass <10C

Evaporation Rate *BuAcet=1*	not volatile
Vapor Density (air=1)	n/a
Weight per Gallon	9.14
Specific Gravity	1.10
Solubility in Water (%)	very slight
Percent Volatile	negligible

10. STABILITY AND REACTIVITY

Stability Stable
Conditions to Avoid: High heat (over 225 F)
Incompatibility: Oxidizing materials
Hazardous Polymerization: Will not occur
Hazardous Decomposition Products: By fire: CO_2, CO, mercury vapors, partially decomposed hydrocarbons, oxides of nitrogen, aldehydes and other undetermined irritating and or toxic fumes or vapors

11. TOXICOLOGICAL INFORMATION

Polyether polyol: Skin rabbit LD50: >2000 mg/kg; dermal rat LD50: >2000 mg/kg; ingestion oral rat LD50: >2000 mg/kg
Phenylmecuric-carboxylate CAS 26545-49-3: Oral rat values of 22-650mg/kg

12. ECOLOGICAL INFORMATION

Mercury compounds are toxic to wildlife, fish and birds. Avoid contact with feed, food and drinking water. Do not allow into drains or otherwise introduce to soil or groundwater.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method: If discarded in its purchased form, this product is a toxicity characteristic waste (mercury, D009) according to 40CFR261.21. Under RCRA, it is the responsibility of the product user to determine, at the time of disposal, whether a material is a hazardous waste. State and local disposal regulations may differ from federal disposal regulations. Dispose in accordance with all federal, state and local waste disposal laws and regulations.

14. TRANSPORT

D.O.T. Shipping Name	none
Technical Shipping Name	Z-8200HG Part A polyol, Plastic related material
D.O.T. Hazard Class	not classified
UN/NA Number	none
NMFC Item	Plastic material liquid 156240 Class 60

15. REGULATORY

Chemical Inventories: All components of this mixture are listed in the TSCA inventory.
TRI: Mercury Compounds N458 are reportable under the TRI program, there is no de minimis for mercury compounds. Reportable threshold for mercury compounds is 10 pounds, the maximum concentration is listed in section 2 of this MSDS. See **http://epa.gov/tri/index.htm** for more information on the TRI program.

16. OTHER

This data is offered in good faith as typical values and not as a product specification. The information in this data sheet was compiled from information supplied by the vendors of the components of this compound. No warranty, either expressed or implied is hereby made. The recommended industrial hygiene and safe handling procedures are believed to be generally applicable. However, each user should review these recommendations in the specific context of the intended use and determine whether they are appropriate. The information on this data sheet is only to assist in the safe handling of this material, and may contain trade secrets, which may not be divulged to anyone except the users of this material and health care and hygiene professionals as required for its safe use. No license or permission to infringe any patent or breach any trade secret is given.