

Material Safety Data Sheet



Date of issue 12 May 2009

Version 5.02

1. Product and company identification

Product name : MID TEMPEARTURE HARDENER
 Code : DCH3085
 Supplier : Refinish Products
 19699 Progress Drive
 Strongsville, OH 44149

Emergency telephone number : (412) 434-4515 (U.S.)
 (514) 645-1320 (Canada)
 01-800-00-21-400 (Mexico)

Technical Phone Number : (740) 363-9610 (DELAWARE, OH) 8:00 a.m. - 5:00 p.m. EST

2. Hazards identification

Emergency overview : DANGER!

FLAMMABLE LIQUID AND VAPOR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. SKIN CONTACT TO ISOCYANATE MONOMER MAY LEAD TO ALLERGIC LUNG REACTION. MAY BE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. SANDING AND GRINDING DUSTS MAY BE HARMFUL IF INHALED. ASPIRATION HAZARD. CAN ENTER LUNGS AND CAUSE DAMAGE. PROLONGED OR REPEATED CONTACT MAY DRY SKIN AND CAUSE IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Keep away from flames, such as a pilot light, and any object that sparks, such as an electric motor. Keep away from heat. Do not smoke. Do not breathe vapor or mist. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Potential acute health effects

Inhalation : May be harmful if inhaled. Irritating to respiratory system. Can irritate eyes, nose, mouth and throat. May cause sensitization by inhalation. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : May be harmful if swallowed. Aspiration hazard if swallowed. Can enter lungs and cause damage.

Skin : Harmful in contact with skin. Irritating to skin. May cause an allergic skin reaction.

Eyes : Severely irritating to eyes. Risk of serious damage to eyes.

Over-exposure signs/symptoms

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness and nausea and may lead to unconsciousness or death. There is some evidence that repeated exposure to organic solvent vapors in combination with constant loud noise can cause greater hearing loss than expected from exposure to noise alone. Based on the properties of the isocyanate components and considering toxicological data on similar preparations, this preparation may cause acute irritation and/or sensitization of the respiratory system, leading to an asthmatic condition, wheezing and tightness of the chest. Sensitized persons may subsequently show asthmatic symptoms when exposed to atmospheric concentrations well below the OEL. Repeated exposure may lead to permanent respiratory disability.

Medical conditions aggravated by over-exposure : Pre-existing respiratory and skin disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

2. Hazards identification

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (section 11)

3. Composition/information on ingredients

Name	CAS number	%
Hexamethylene diisocyanate, oligomers	28182-81-2	40 - 70
heptan-2-one	110-43-0	10 - 30
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	53880-05-0	7 - 13
xylene (mixture of o-, m-, p-isomers)	1330-20-7	3 - 7
n-butyl acetate	123-86-4	3 - 7
ethylbenzene	100-41-4	0.5 - 1.5
hexamethylene-di-isocyanate	822-06-0	0.1 - 1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open.
- Skin contact** : Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do not use solvents or thinners.
- Inhalation** : Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Ingestion** : If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting.
- Notes to physician** : 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.

5. Fire-fighting measures

Flammability of the product : Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

- Suitable** : Use dry chemical, CO₂, water spray (fog) or foam.
- Not suitable** : Do not use water jet.
- Special exposure hazards** : 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
Hydrogen cyanide (HCN).
Cyanate and isocyanate.

5 . Fire-fighting measures

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.

6 . Accidental release measures

- Personal precautions** : 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- 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).
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Use spark-proof tools and explosion-proof equipment. 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.
- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Special provisions** : 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). Place in a suitable container. The contaminated area should be cleaned immediately with a suitable decontaminant. One possible (flammable) decontaminant comprises (by volume): water (45 parts), ethanol or isopropyl alcohol (50 parts) and concentrated (d: 0,880) ammonia solution (5 parts). A non-flammable alternative is sodium carbonate (5 parts) and water (95 parts). Add the same decontaminant to the remnants and let stand for several days until no further reaction in an unsealed container. Once this stage is reached, close container and dispose of according to local regulations (see section 13). Do not allow to enter drains or watercourses. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. 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 breathe vapor or mist. Do not swallow. Do not get in eyes or on skin or clothing. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. Vapors are heavier than air and may spread along floors. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse

7. Handling and storage

container. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts.

Storage

: Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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. Uncontrolled exothermic reactions occur with amines and alcohols. The product reacts slowly with water, resulting in the production of carbon dioxide. In closed containers, pressure buildup could result in distortion, expansion and, in extreme cases, bursting of the container. Do not store above the following temperature: 120F / 49C.

8. Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	PPG
Hexamethylene diisocyanate, oligomers	TWA	Not established	Not established	Not established	Not established	0.5 mg/m ³
	STEL	Not established	Not established	Not established	Not established	1 mg/m ³
heptan-2-one	TWA	50 ppm	100 ppm	25 ppm	50 ppm	Not established
	STEL	Not established	Not established	Not established	100 ppm	Not established
3-Isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate, oligomers	TWA	Not established	Not established	Not established	Not established	0.46 mg/m ³
xylene (mixture of o-, m-, p-isomers)	TWA	100 ppm	100 ppm	100 ppm	100 ppm	Not established
	STEL	150 ppm	Not established	150 ppm	150 ppm	Not established
n-butyl acetate	TWA	150 ppm	150 ppm	150 ppm	150 ppm	Not established
	STEL	200 ppm	Not established	200 ppm	200 ppm	Not established
ethylbenzene	TWA	100 ppm	100 ppm	100 ppm	100 ppm	Not established
	STEL	125 ppm	Not established	125 ppm	125 ppm	Not established
hexamethylene-di-isocyanate	TWA	0.01 ppm	Not established	Not established	Not established	Not established

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	TD	= Total dust
IPEL	= Internal Permissible Exposure Limit	TLV	= Threshold Limit Value
OSHA	= Occupational Safety and Health Administration.	TWA	= Time Weighted Average

8 . Exposure controls/personal protection

R = Respirable

Z = OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : 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. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- 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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

- Eyes** : Chemical splash goggles.
- Hands** : 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.
- Gloves** : butyl rubber
- Respiratory** : By spraying: air-fed respirator. By other operations than spraying, in well ventilated areas, air-fed respirators could be replaced by a combination charcoal filter and particulate filter mask. 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.
- Skin** : 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.
- 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.
- Restrictions on use** : Persons with a history of asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used.

9 . Physical and chemical properties

- Physical state** : Liquid.
- Flash point** : Closed cup: 33.33°C (92°F)
- Explosion limits** : Lower: 1.2%
- Color** : Not available.
- Odor** : Not available.
- pH** : Not available.
- Boiling/condensation point** : >37.78°C (>100°F)
- Melting/freezing point** : Not available.
- Specific gravity** : 1.05
- Density (lbs / gal)** : 8.76
- Vapor pressure** : 0.55 kPa (4.1 mm Hg)
- Vapor density** : Not available.

9 . Physical and chemical properties

Volatility	: 33% (v/v), 26.27% (w/w)
Odor threshold	: Not available.
Evaporation rate	: 59 (Butyl acetate. = 1)
Octanol/water partition coefficient	: Not available.
% Solid. (w/w)	: 73.73

10 . Stability and reactivity

Stability	: The product may not be stable under certain conditions of storage or use.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
Materials to avoid	: Reactive or incompatible with the following materials:,oxidizing materials,strong acids,strong alkalis
Hazardous decomposition products	: Cyanate and isocyanate.
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Hexamethylene diisocyanate, oligomers heptan-2-one	LC50 Inhalation	Rat	18500 mg/m ³	1 hours
	LD50 Oral	Rat	1.6 g/kg	-
	LD50 Dermal	Rabbit	10.206 g/kg	-
xylene (mixture of o-, m-, p-isomers)	LD50 Oral	Rat	4.3 g/kg	-
	LD50 Dermal	Rabbit	>1.7 g/kg	-
	LC50 Inhalation Vapor	Rat	5000 ppm	4 hours
n-butyl acetate	LD50 Oral	Rat	10.768 g/kg	-
	LD50 Dermal	Rabbit	>17600 mg/kg	-
	LC50 Inhalation Vapor	Rat	390 ppm	4 hours
ethylbenzene	LD50 Oral	Rat	3.5 g/kg	-
	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LC50 Inhalation Vapor	Rat	4000 ppm	4 hours
hexamethylene-di-isocyanate	LD50 Oral	Rat	0.71 g/kg	-
	LD50 Dermal	Rabbit	0.57 g/kg	-
	LC50 Inhalation Vapor	Rat	151 mg/m ³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Defatting irritant? : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

Target organs : Contains material which causes damage to the following organs: blood, kidneys, liver, brain, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.
Contains material which may cause damage to the following organs: peripheral nervous system, nose/sinuses, throat.

11 . Toxicological information

Carcinogenicity

- Conclusion/Summary : Not available.
- Carcinogenicity : Contains material which may cause cancer, based on animal data. Risk of cancer depends on duration and level of exposure.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
xylene (mixture of o-, m-, p-isomers)	A4	3	-	-	-	-
ethylbenzene	A3	2B	-	-	-	-

Mutagenicity

- Conclusion/Summary : Not available.
- Mutagenicity : No known significant effects or critical hazards.

Teratogenicity

- Conclusion/Summary : Not available.
- Teratogenicity : No known significant effects or critical hazards.

Reproductive toxicity

- Conclusion/Summary : Not available.
- Developmental effects : No known significant effects or critical hazards.
- Fertility effects : No known significant effects or critical hazards.

12 . Ecological information

- Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Result	Species	Exposure
heptan-2-one	Acute LC50 131000 to 137000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
xylene (mixture of o-, m-, p-isomers)	Acute LC50 3300 to 4093 ug/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
n-butyl acetate	Acute LC50 18000 to 19000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas	96 hours
ethylbenzene	Acute LC50 4200 ug/L Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours
	Acute LC50 5100 to 5700 ug/L Marine water	Fish - Atlantic silverside - Menidia menidia	96 hours
	Acute EC50 2930 to 4400 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	Chronic NOEC 3300 ug/L Marine water	Fish - Atlantic silverside - Menidia menidia	96 hours

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. 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.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14 . Transport information

Regulation	UN number	Proper shipping name	Classes	PG*	Additional information
UN	1263	Paint	3	III	-
IMDG	1263	Paint	3	III	-
DOT	1263	Paint	3	III	-

PG* : Packing group

Reportable quantity RQ : CERCLA: Hazardous substances.: n-butyl acetate: 5000 lbs. (2270 kg); ethylbenzene: 1000 lbs. (454 kg); xylene (mixture of o-, m-, p-isomers): 100 lbs. (45.4 kg);

15 . Regulatory information

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

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

Canada inventory : All components are listed or exempted.

China inventory (IECSC) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

Japan inventory (ENCS) : All components are listed or exempted.

Korea inventory (KECI) : All components are listed or exempted.

New Zealand : Not determined.

Philippines inventory (PICCS) : All components are listed or exempted.

United States

U.S. Federal regulations : TSCA 12(b) annual export notification: No products were found.

TSCA 12(b) one-time export: No products were found.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: n-butyl acetate; heptan-2-one; ethylbenzene; xylene (mixture of o-, m-, p-isomers)

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: n-butyl acetate: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; heptan-2-one: Fire hazard, Immediate (acute) health hazard; ethylbenzene: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; xylene (mixture of o-, m-, p-isomers): Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

CERCLA: Hazardous substances.: n-butyl acetate: 5000 lbs. (2270 kg); ethylbenzene: 1000 lbs. (454 kg); xylene (mixture of o-, m-, p-isomers): 100 lbs. (45.4 kg);

SARA 313

Product name

CAS number

Concentration

Product code DCH3085

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Product name MID TEMPEARTURE HARDENER

15 . Regulatory information

Form R - Reporting requirements	: xylene (mixture of o-, m-, p-isomers) ethylbenzene	1330-20-7 100-41-4	3 - 7 0.5 - 1.5
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California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Canada

WHMIS (Canada) : Class B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). Class D-2A: Material causing other toxic effects (Very toxic). Class D-2B: Material causing other toxic effects (Toxic).

Mexico

Classification

Flammability : 3 Health : 2 Reactivity : 1

16 . Other information

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

Health : 2 * Flammability : 3 Physical hazards : 1

(*) - Chronic effects

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 MSDSs 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.

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

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

Health : 2 Flammability : 3 Instability : 1

Date of previous issue : No previous validation.

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.