



# Carlisle Polyurethane Systems Safety Data Sheet

## 1. Identification of Substance:

Product Name: Tru-Motion H3725

**Supplier Identification:**

Carlisle Polyurethane Systems

**Telephone:**

(314) 872-8700

**Address:**

2500 Adie Road  
Maryland Heights, MO 63043

**24-Hr. Emergency Phone Number:**

CHEMTREC (800) 424-9300  
INTERNATIONAL: +1-(703) 527-3887

Product Use: Polyurethane isocyanate component

## 2. Hazards Identification

**GHS Ratings:**

Inhalation Toxicity	Acute Tox. 4	Gases>2500+<=5000ppm, Vapors>10+<=20mg/l, Dusts&mists>1+<=5mg/l
Skin corrosive	2	Reversible adverse effects in dermal tissue, Draize score: >= 2.3 < 4.0 or persistent inflammation
Eye corrosive	2B	Mild eye irritant: Subcategory 2B, Reversible in 7 days
Respiratory sensitizer	1	Respiratory sensitizer
Skin sensitizer	1	Skin sensitizer
Mutagen	1B	Known to produce heritable mutations in human germ cellsSubcategory 1B, Positive results: In vivo heritable germ cell tests in mammals, Human germ cell tests, In vivo somatic mutagenicity tests, combined with some evidence of germ cell mutagenicity
Carcinogen	1B	Presumed Human Carcinogen, Based on demonstrated animal carcinogenicity
Organ toxin single exposure	3	Transient target organ effects- Narcotic effects- Respiratory tract irritation
Organ toxin repeated exposure	1	Significant toxicity in humans- Reliable, good quality human case studies or epidemiological studies Presumed significant toxicity in humans- Animal studies with significant and/or severe toxic effects relevant to humans at generally low exposure

**GHS Hazards**

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H320	Causes eye irritation
H332	Harmful if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H340	May cause genetic defects

H350 May cause cancer  
H372 Causes damage to organs through prolonged or repeated exposure

### **GHS Precautions**

P201 Obtain special instructions before use  
P202 Do not handle until all safety precautions have been read and understood  
P260 Do not breathe dust/fume/gas/mist/vapors/spray  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 Wash hands thoroughly after handling  
P270 Do not eat, drink or smoke when using this product  
P271 Use only outdoors or in a well-ventilated area  
P272 Contaminated work clothing should not be allowed out of the workplace  
P280 Wear protective gloves/protective clothing/eye protection/face protection  
P281 Use personal protective equipment as required  
P285 In case of inadequate ventilation wear respiratory protection  
P312 Call a POISON CENTER or doctor/physician if you feel unwell  
P314 Get Medical advice/attention if you feel unwell  
P321 Specific treatment is urgent (see Section 4 First Aid measures)  
P362 Take off contaminated clothing and wash before reuse  
P363 Wash contaminated clothing before reuse  
P302+P352 IF ON SKIN: Wash with soap and water  
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P304+P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing  
P305+P351+P338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing  
P308+P313 IF exposed or concerned: Get medical advice/attention  
P332+P313 If skin irritation occurs: Get medical advice/attention  
P333+P313 If skin irritation or a rash occurs: Get medical advice/attention  
P337+P313 Get medical advice/attention  
P342+P311 Call a POISON CENTER or doctor/physician  
P405 Store locked up  
P403+P233 Store in a well ventilated place. Keep container tightly closed  
P501 Dispose of contents/container in accordance with existing federal, state, and local environmental control laws.

**Signal Word: Danger**



#### **Acute Health Effects:**

**Eyes:** Severe irritation, tearing, swelling, and possible damage to cornea.

**Skin:** Irritation, redness, swelling, skin sensitization, rash, scaling, and blistering.

**Inhalation:** Mucous membrane and respiratory tract irritation, tightness of chest, isocyanate sensitization.

**Ingestion:** Irritating and corrosive to mouth, stomach, and digestive tract.

**Conditions Aggravated by Exposure:** Asthma, respiratory disorders, skin disorders, and eye disorders.

**Chronic Health Effects:** Isocyanates may cause skin and respiratory sensitivity in some individuals. Sensitized individuals may react to very low levels diisocyanates below the PEL. Sensitized people who continue to work with diisocyanates may develop symptoms sooner after each exposure. Limited evidence of possible carcinogenic effects. Possible other harmful target organ effects.

### **3. Composition/Data on Components:**

Chemical Name	CAS number	Weight Concentration %
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxypoly[oxy(methyl-1,2-ethanediy)]	53862-89-8	80.00% - 90.00%
4,4'-Methylenediphenyl diisocyanate	101-68-8	5.00% - 10.00%
Benzene, 1-isocyanato-2-[(4-isocyanatophenyl)methyl]-	5873-54-1	5.00% - 10.00%
Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	1.00% - 5.00%
Benzene, 1,1'-methylenebis[2-isocyanato-	2536-05-2	1.00% - 5.00%
Naphtha, petroleum, heavy alkylate	64741-65-7	0.10% - 1.00%

#### **4. First Aid Measures:**

**After Inhalation:** May cause severe irritation to upper respiratory tract and lungs, respiratory sensitization, decreased lung capacity.

Remove from exposure area to fresh air. Administer oxygen or artificial respiration as needed. Obtain medical attention.

**After Eye Contact:** Rinse opened eye for at least 15 minutes under running water. Remove contact lenses if present and easy to do so, and continue rinsing. If irritation persists contact physician

**After Skin Contact:** Remove contaminated clothing. Clean affected area with soap and plenty of water. Call a physician if irritation or rash develops.

**After Swallowing:** Do not induce vomiting. If conscious, give 1 to 2 cups of milk or water to drink. Consult a physician at once.

**Notes to Physician:** Treat symptomatically. Following severe exposure the patient should be kept under medical observation for a least 48 hours.

#### **5. Fire Fighting Measures:**

Flash Point: 230 C (446 F)

LEL: N/A

UEL: N/A

Upper and Lower Explosive Limits listed if known.

**Suitable Extinguishing Agents:** Water spray, CO2, Foam, Dry chemical

**Information about Protection against Explosions and Fires:** During the incipient stage of a fire, containers should be kept cool by spraying with water (i.e., water suppression system) on the outside of container. Water spray will help prevent containers from overheating. Use cold-water spray to cool fire-exposed containers to minimize risk of rupture. Large fires can be extinguished with high volumes of water, such as from a fire hose applied from a safe distance. Closed containers may rupture when exposed to extreme heat due to build-up of pressure from thermal degradation and/or carbon dioxide generation.

Section 5 pertains to fire-fighting measures and reactivity is addressed in section 10.

**Dangerous Products of Decomposition:** Oxides of carbon, oxides of nitrogen, isocyanates, and traces of HCN.

**Protective Equipment:** Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters.

**6. Accidental Release Measures:**

**Person-Related Safety Precautions:** Evacuate all non-essential personnel. Avoid contact with skin. Do not breathe aerosols or vapors.

**Measures for Environmental Protection:** Cover and contain spill with absorbent material. Place waste in open container. Remove to well ventilated area and dilute with ammonia solution (water 90%, concentrated ammonia 8%, detergent 2%). Collect for proper disposal according to local, state, and federal regulations.

**Small Spills:** Absorb with earth, sand or other absorbent material and transfer to containers for later disposal. Wipe up with absorbent material (e.g. cloth, fleece) clean surface thoroughly to remove residual contamination.

**Large Spills:** Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Use an absorbent material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

**7. Handling and Storage:**

**Information for Safe Handling:** Do not breathe fumes, vapors or mists. Use only with adequate ventilation. Avoid contact with skin or eyes. Immediately report spills or leaks.

**Storage Requirements:** Store containers in a dry, well ventilated area. Keep containers tightly closed and prevent moisture contamination. Do not re-seal the container if contamination is suspected. Store between 60°F and 100°F.

**Regulatory Requirements:** Store according to all local, state, and federal regulations.

**8. Exposure Controls and Personal Protection:**

Chemical Name / CAS No.	OSHA Exposure Limits	ACGIH Exposure Limits	Other Exposure Limits
Isocyanic acid, polymethylenepolyphenylene ester, polymer with .alpha.-hydro-.omega.-hydroxy poly[oxy(methyl-1,2-ethanediyl)] 53862-89-8	Not Established	Not Established	Not Established
4,4'-Methylenediphenyl diisocyanate 101-68-8	0.005 ppm TWA 0.02 ppm STEL	0.005 ppm TWA (listed under Methylene bisphenyl isocyanate (MDI))	NIOSH: 0.005 ppm TWA (listed under Methylene bisphenyl isocyanate); 0.05 mg/m <sup>3</sup> TWA 0.020 ppm Ceiling (10 min); 0.2 mg/m <sup>3</sup> Ceiling (10 min)
Benzene, 1-isocyanato-2-[[4-isocyanatophenyl)methyl]- 5873-54-1	Not Established	Not Established	Not Established

Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9	Not Established	Not Established	Not Established
Benzene, 1,1'-methylenebis[2-isocyanato- 2536-05-2	Not Established	Not Established	Not Established
Naphtha, petroleum, heavy alkylate 64741-65-7	500 ppm TWA	Not Established	Not Established

**Engineering Controls:** Use local exhaust ventilation to maintain airborne concentrations below the TLV, especially if heating or spraying. Use only in a well-ventilated area to keep vapors below exposure limits. Use local exhaust ventilation if necessary.

**General Protective and Hygienic Measures:** Usual precautionary measures should be adhered to when handling chemicals.

**Personal Protective Equipment:**

**Respiratory Protection:** Do not inhale vapors. Use NIOSH approved respiratory protection if TLV/PEL is exceeded. Do not enter storage area unless adequately ventilated.

**Hand Protection:** Protective butyl rubber or nitrile rubber gloves.

**Eye Protection:** Chemical safety goggles.

**Body Protection:** Impervious protective work clothing. Launder separately.

**Contaminated Gear:** Observe local requirements. Dispose of in accordance with local/state/federal regulations.

**9. Physical and Chemical Properties:**

Physical properties listed where known.

<p><b>Appearance:</b> Amber liquid</p> <p><b>Vapor Pressure:</b> N/A</p> <p><b>Vapor Density:</b> N/A</p> <p><b>Specific Gravity:</b> 1.07</p> <p><b>Freezing point:</b> N/A</p> <p><b>Boiling range:</b> N/A</p> <p><b>Evaporation rate:</b> N/A</p> <p><b>Explosive Limits:</b> N/A</p> <p><b>Autoignition temperature:</b> 240°C</p>	<p><b>Odor:</b> Musty</p> <p><b>Odor threshold:</b> N/A</p> <p><b>pH:</b> N/A</p> <p><b>Melting point:</b> N/A</p> <p><b>Solubility:</b> N/A</p> <p><b>Flash point:</b> 446°F, 230°C</p> <p><b>Flammability:</b> N/A</p> <p><b>Partition coefficient (n-octanol/water):</b> N/A</p> <p><b>Decomposition temperature:</b> N/A</p>
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**10. Stability and Reactivity:**

**Chemical Incompatible Materials:** MDI will react with a wide range of common chemicals. During use of this product in the work environment, protect the product from contamination such as inadvertent contact with water, amines, strong bases and alcohols. For example, allowing water inside an MDI container will lead to the generation of carbon dioxide gas and result in the development of excess pressure if the container is tightly re-sealed.

**Hazardous Polymerization:** Not expected to occur under normal conditions.

**Dangerous Products of Decomposition:** Oxides of carbon, oxides of nitrogen, hydrocarbons, isocyanates, and traces of HCN.

## **11. Toxicological Information:**

### **Mixture Toxicity**

Inhalation Toxicity LC50: 13mg/L

### **Component Toxicity**

101-68-8	4,4'-Methylenediphenyl diisocyanate Dermal LD50: 1 mg/L (Rat) Inhalation LC50: 369 mg/m3 (Rat)
9016-87-9	Isocyanic acid, polymethylenepolyphenylene ester Dermal LD50: 490 mg/L (Rat) Inhalation LC50: 490 mg/L (Rat)
64741-65-7	Naphtha, petroleum, heavy alkylate Inhalation LC50: 3,684 ppm (Rat)

### **Individual Toxicity Values Listed if Known**

#### **Acute Toxicity:**

**Eyes:** Severe irritation, tearing, swelling, and possible damage to cornea.

**Skin:** Irritation, redness, swelling, skin sensitization, rash, scaling, and blistering.

**Inhalation:** Mucous membrane and respiratory tract irritation, tightness of chest, isocyanate sensitization.

**Ingestion:** Irritating and corrosive to mouth, stomach, and digestive tract.

**Chronic Effects:** Isocyanates may cause skin and respiratory sensitivity in some individuals. Sensitized individuals may react to very low levels diisocyanates below the PEL. Sensitized people who continue to work with diisocyanates may develop symptoms sooner after each exposure. Limited evidence of possible carcinogenic effects.

**Routes of Entry:** Inhalation, Ingestion, skin contact, eye contact.

**Target Organs:** Respiratory tract, eyes, skin.

#### **Chemicals with Known or Possible Carcinogenic Effects:**

<u>CAS Number</u>	<u>Description</u>	<u>% Weight</u>	<u>Carcinogen Rating</u>
64741-65-7	Naphtha, petroleum, heavy alkylate	0.1 to 1.0%	Naphtha, petroleum, heavy alkylate: EU REACH: Present (P)

## **12. Ecological Information:**

**General Information:** Based on experience, no adverse effects are to be expected if correct disposal procedures have been followed as indicated in section 13.

Individual component ecotoxicity listed if known.

**Component Ecotoxicity**

4,4'-Methylenediphenyl diisocyanate	24 Hr LC50 Brachydanio rerio: >500 mg/L 24 Hr EC50 Daphnia magna: >500 mg/L
Naphtha, petroleum, heavy alkylate	48 Hr LC50 Mysidopsis bahia: 2 mg/L 72 Hr EC50 Pseudokirchneriella subcapitata: 30000 mg/L

**13. Disposal Considerations:**

**Recommendation:** Observe local requirements. Dispose of in accordance with local/state/federal regulations.

**Empty Container Precautions:** Empty containers retain product residue; observe all precautions for product. Do not heat or cut empty container with electric or gas torch because highly toxic vapors and gases are formed. Do not reuse without thorough commercial cleaning and reconditioning. If container is to be disposed, ensure all product residues are removed and container is empty prior to disposal. Contact the Reusable Industrial Packaging Association (RIPA) at 301-577-3786 to find a drum re-conditioner in North America ([www.reusablepackaging.org](http://www.reusablepackaging.org)).

**14. Transport Information:**

**DOT Regulated Components:**

This product is not regarded as dangerous goods according to the national and international regulations on the transport of dangerous goods unless specifically cited below:

4,4' Methylene Diphenyl Diisocyanate  
Reportable Quantity: 5000 lbs

When in individual containers of less than the substance RQ, this material ships as non-regulated. Containers above RQ ship as:

<u>Agency</u>	<u>Proper Shipping Name</u>	<u>UN Number</u>	<u>Packing Group</u>	<u>Hazard Class</u>
DOT	Other Regulated Substance, N.O.S. (Contains Diphenylmethane Diisocyanate)	3082	III	9

**15. Regulatory Information:**

**OSHA HAZARD COMMUNICATION STANDARD:** This material is classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

**SARA 311/312 Hazard Categories:** Acute health hazard, chronic health hazard

**WARNING:** This product can expose you to chemicals listed below, which are known to the State of California to cause cancer, birth defects, or reproductive harm. For more information, visit [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

- None

**Massachusetts Right To Know List:**

4,4'-Methylenediphenyl diisocyanate 101-68-8 5 to 10 %

**New Jersey Right To Know List:**

Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9 1 to 5 %

**Pennsylvania Right To Know List:**

4,4'-Methylenediphenyl diisocyanate 101-68-8 5 to 10 %

**SARA 302 Extremely Hazardous Substances:**

- None

**Chemicals subject to SARA 313 Reporting:**

Isocyanic acid, polymethylenepolyphenylene ester 9016-87-9 1 to 5 % Emissions  
4,4'-Methylenediphenyl diisocyanate 101-68-8 5 to 10 % Emissions

<u>Country</u>	<u>Regulation</u>	<u>All Components Listed</u>
Canada	Canada DSL	Yes
US	Toxic Substances Control Act	Yes

**16. Other Information:**

Safety Data Sheet issued by Product Safety Department

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Carlisle Polyurethane Systems. The data on these sheets relates only to the specific material designated herein. Carlisle Polyurethane Systems assumes no legal responsibility for use or reliance upon this data. It is the user's responsibility to ensure that their activities comply with federal, state, or local laws.

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