



# MATERIAL SAFETY DATA SHEET

DAEHEUNG CHEMICAL CO., LTD. [www.dhcbond.com](http://www.dhcbond.com)

PGM

Product Name

DM-700(A)

## 1. Product and Company Identification

- A. Product Name DM-700(A)
- B. Recommended use of the chemical and restrictions on use
- Recommended use of the chemical bonding for the PVC sheet and film to wood and plastic, hard board, wood based materials, resin felt, etc.
  - Restrictions on use of the product Hazardous material
- C. Manufacturer/Supplier/Distributor Information
- Name DAEHEUNG CHEMICAL CO., LTD.
  - Address 68, Sandan-ro 64beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea
  - Emergency phone number 82-31-668-1424

## 2. Hazards identification

- A. Hazard-Risk Classification
- Flammable Liquid : Category 2
  - Skin corrosion / Irritation : Category 2
  - Serious eye damage / Irritation : Category 2
  - Reproductive toxicity : Category 1A
  - Target Organ Toxicity (Single Exposure) : Category 1
  - Target Organ Toxicity (Repeated Exposure) : Category 1
  - Target Organ Toxicity (Repeated Exposure) : Category 1

### B. Label elements including precautionary statements

- Symbol



- Signal Word

Danger

- Hazard-Risk Statement

H225 Highly flammable liquid and vapour  
H304 May be fatal if swallowed and enters airways  
H315 Causes skin irritation  
H319 Causes serious eye irritation  
H335 May cause respiratory irritation  
H336 May cause drowsiness or dizziness  
H360 May damage fertility or the unborn child

- Precautionary Statement

Prevention

P201 Obtain special instructions before use  
P202 Do not handle until all safety precautions have been read and understood  
P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking  
P233 Keep container tightly closed  
P240 Ground/bond container and receiving equipment  
P241 Use explosion-proof electrical/ventilating/light/.../equipment  
P242 Use only non-sparking tool  
P243 Take precautionary measures against static discharge

Prevention	<p>P260 Do not breathe dust/fume/gas/mist/vapours/spray</p> <p>P264 Wash ... thoroughly after handling</p> <p>P270 Do not eat, drink or smoke when using this product</p> <p>P271 Use only outdoors or in a well-ventilated area</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection</p>
Response	<p>P281 Use personal protective equipment as required</p> <p>P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician</p> <p>P302+352 IF ON SKIN : Wash with soap and water</p> <p>P303+P361+P353 IF ON SKIN (or hair) : Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower</p> <p>P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing</p> <p>P305+351+338 IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing</p> <p>P307+311: IF exposed: Call a POISON CENTER or doctor/physician</p> <p>P308+P313 IF exposed or concerned : Get medical advice/attention</p> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell</p> <p>P314 Get Medical advice/attention if you feel unwell</p> <p>P331 Do NOT induce vomiting</p> <p>P332+313 If skin irritation occurs: Get medical advice/attention</p> <p>P337+313 If eye irritation persists get medical advice/attention</p> <p>P362 Take off contaminated clothing and wash before reuse</p>
Storage	<p>P403+233: Store in a well ventilated place. Keep container tightly closed</p> <p>P403+235: Store in a well ventilated place. Keep cool</p> <p>P405: Store locked up</p>
Disposal	P501 Dispose of contents/container to ...

C. Other Hazard-Risk which are not included in the classification criteria (e.g. dust explosion hazard)

	TOLUENE	ACETONE	POLYURETHANE
<b>Health</b>	2	1	N/A
<b>Fire</b>	3	3	N/A
<b>Reactivity</b>	0	0	N/A

### 3. Composition/Information on ingredients

Chemical Name	Other name	CAS number	Content(%)
TOLUENE	Methyl benzene	108-88-3	10~20
ACETONE	2-PROPANONE	67-64-1	70~80
POLYURETHANE	—	9009-54-5	10~15

### 4. First aid measures

A. Eye contact	<p>IF IN EYES: Wash carefully with water for several minutes. Remove contact lenses, if possible. Easy to do.</p> <p>If eye irritation persists, Consult a physician if irritation persists.</p>
B. Skin contact	<p>Skin (or hair): Take off immediately all contaminated clothing or remove the Keep. Rinse skin with water / shower.</p> <p>If skin irritation occurs, obtain medical advice Keep.</p> <p>Take off immediately all contaminated clothing or remove the Keep.</p> <p>Wash skin with soap and water.</p>
C. Inhalation	<p>Do not induce vomiting.</p> <p>Excessive dust, or fumes when exposed to clean air removed by coughing or other symptoms and Seek medical attention if you have.</p>

D. Ingestion	Seek immediate medical advice. Do not induce vomiting.
E. Indication of immediate medical attention and notes for physician	Medical personnel are aware of the material and to take precautions to protect.

## 5. Fire-Fighting measures

A. Suitable (and unsuitable) extinguishing media	Water spray, foam, dry powder When to do Fire-Fighting, use dry sand or earth.
B. hazards arising from the chemical (e.g. nature of any hazardous combustion products)	Highly flammable liquid and vapor. Vapors may form explosive mixtures with air. The steam explosion hazard at Indoor, outdoor, drain.
C. Special protective equipment and precautions for fire-fighters	In case of fire: Wear self-contained breathing apparatus. Cool tanks/drums with water spray/remove them into safety.

## 6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures	Use water spray/stream to protect personnel and to cool endangered containers.  Remove product from area of fire. Wear suitable protective clothing, gloves and eye/face protection. Stop leak if safe to do so. Remove all sources of ignition. In case of fire: Wear selfcontained breathing apparatus. Evacuate unnecessary personnel. Remove all sources of ignition. Stop leak if safe to do so. Eliminate leaks immediately.
B. Environmental precautions and protective procedures	Avoid release to the environment Waterways, sewers, basements, and Prevent entry into confined spaces.
C. Methods and materials for containment and cleaning up	Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents). Collect in closed containers for disposal.  Dispose of this material and its container to hazardous or special waste collection point.

## 7. Handling and storage

A. Precautions for safe handling	Do not handle until all safety precautions Read and understand all safety precautions. Wear suitable chemical resistant gloves, safety goggles, dust mask and other protective clothing. Use in the well-ventilated areas. Prevent build-up electrostatic charge(by grounding). Shower and eye bath. Keep away from acidic material. Be careful to high temperatures.
B. Conditions for safe storage (including any incompatibilities)	Store in its original container in a cool environment, keep away from heat, spark, and open flame. Ground containers during storage and transfer operations to avoid static spark.  Ideal storage temp. range fore ease of handling is 10 ~ 27°C Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

## 8. Exposure controls & personal protection

A. Control parameters (e.g. occupational exposure limit values, biological limit values)

– Occupational exposure limit values

TOLUENE

TWA – 50ppm 188mg/m<sup>3</sup> STEL – 150ppm 560mg/m<sup>3</sup>

ACETONE	TWA – 500ppm 1188mg/m <sup>3</sup> STEL – 750ppm 1782mg/m <sup>3</sup>
– ACGIH limit values	
TOLUENE	TWA 20 ppm 75 mg/m <sup>3</sup>
ACETONE	TWA – 500ppm
	STEL 750 ppm
– Biological limit values	
TOLUENE	0.02mg/L, 0.03mg/L
B. Appropriate engineering controls	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate ventilation.
C. Personal protective equipment	
– Respiratory protection	The filter class must be suitable for the maximum contaminant concentration(gas/vapour/aerosol/particulates) that may arise when handling the product. If the concentration is exceeded, closed-circuit breathing apparatus must be used!.
	In case of fire: Wear self contained breathing apparatus.
– Eye protection	Wear eye protection/face protection.
– Hands protection	Wear proper chemical resistant gloves.
– Body protection	Wear proper Protective clothing.

## 9. Physical and chemical properties

A. Appearance	
Physical state	Viscous liquid
Color	Clear
B. Odour	Solvent
C. Odour threshold	No data available
D. pH	Not Applicable
E. Melting point/freezing point	Not Applicable
F. Initial boiling point and boiling range	56°C
G. Flashing point	–20 °C
H. Evaporation rate	No data available
I. Flammability(solid, gas)	No data available
J. Upper/lower flammability or explosive limits	2.5% / 13%
K. Vapor pressure	No data available
L. Solubility	Soluble in water
M. Vapor density	No data available
N. Relative density	0.92
O Partition coefficient:n-octanol/water	Not Applicable
P. Auto-ignition temperature	465°C
Q. Decomposition temperature	No data available
R. Viscosity	150~350cps (at 20°C)
S. Formula mass	No data available

## 10. Stability and reactivity

A.Chemical stability and possibility of hazardous reactions	Stable under normal conditions.
B. Conditions to avoid	Keep away from heat/sparks/open flames/hot surfaces – No smoking
C. Incompatible materials	Flammable material
D. Hazardous decomposition products	CO, CO <sub>2</sub> , nitrogen compounds, hazardous gas etc.

## 11. Toxicological information

A. Information on the likely routes of exposure	No data available
B. Health hazards information	
– Acute toxic	
Oral	
TOLUENE	LD50 2600 mg/kg Rat
ACETONE	LD50 5280 mg/kg Rat (EHC(1990), SIDS(1997))
Inhalation	
TOLUENE	LC50 12.5 mg/ℓ 4 hr Rat
ACETONE	LC50 32000 ppm Rat
Dermal	
TOLUENE	LD50 120000 mg/kg Rat
ACETONE	LD50 12870 mg/kg Rabbit (EHC(1990), PATTY(1994), SIDS(1997))
– Skin corrosive/irritant	
TOLUENE	Skin – rabbit – Mild skin irritation
ACETONE	Skin – rabbit – No skin irritation
– Serious eye damage/eye irritation	
TOLUENE	Eye irritation
ACETONE	Eye irritation
– Respiratory sensitization	No data available
– Skin sensitization	
TOLUENE	Negative (Guinea Pigs)
ACETONE	Negative (Guinea Pigs, Mouse)
– Carcinogenicity	
IARC	Group 3
ACGIH	A4

## 12. Ecological information

A. Aquatic and terrestrial ecotoxicity	
– Fish	
TOLUENE	LC50 24 mg/ℓ 96 hr Oncorhynchus mykiss
ACETONE	LC50 > 100 mg/ℓ 96 hr
– Shellfish	
TOLUENE	EC50 11.5 mg/ℓ 48 hr Daphnia magna
ACETONE	No data available
– Bird	No data available
B. Persistence and degradability	
– Persistence	
TOLUENE	log Kow 2.73
C. Bioaccumulative potential	
– Concentrated Castle	No data available
– Biodegradable	
TOLUENE	86 (%) 20 day
D. Mobility in soil	No data available
E. Other adverse effects	No data available

### 13. Disposal considerations

- |                        |                                     |
|------------------------|-------------------------------------|
| A. Disposal method     | Destroy the product by incineration |
| B. Disposal precaution | Destroy the product by incineration |

### 14. Transport information

- |   |                                       |
|---|---------------------------------------|
| A. UN number  | 1133                                  |
| B. UN proper shipping name  | ADHESIVES containing flammable liquid |
| C. Transport hazard class:  | 3                                     |
| D. Packing group (if applicable)  | II                                    |
| E. Marine pollution (yes/no)  | Yes                                   |
| F. Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises: | F-E, S-D                              |

### 15. Regulatory information

- |   |  |
|---|--|
| A. Industrial Safety and Health Act                   | Article 39 (Management, etc. of Harmful Agents)<br>Article 41 (Preparation, Keeping, etc. of Material Safety Data Sheet) |
| B. Toxic Chemical Control Act                         | Not Applicable.  |
| C. Dangerous Material Safety Control Act              |  |
| TOLUENE   | The 4th type, the 1st petroleum type 200ℓ  |
| ACETONE   | The 4th type, the 1st petroleum type 400ℓ  |
| D. Wastes Management Act                              | Designated Wastes  |
| E. Other requirements in domestic and other countries |  |
| – Domestic  | Not Applicable.  |
| – Other countries                                     |  |
| CERCLA  |  |
| TOLUENE   | 453.599 kg 1000 lb   |
| ACETONE   | 2267.995 kg 5000 lb  |
| EU regulations  |  |
| TOLUENE   | F; R11Repr.Cat.3; R63Xn; R48/20-65Xi; R38R67   |
| ACETONE   | F; R11Xi; R36R66R67  |
| EU regulations  |  |
| TOLUENE   | R11, R38, R48/20, R63, R65, R67  |
| ACETONE   | R11, R36, R66, R67   |
| EU regulations  |  |
| TOLUENE   | S2, S36/37, S46, S62   |
| ACETONE   | S2, S9, S16, S26, S46  |

### 16. Other information

- |   |                   |
|---|-------------------|
| A. Information source and references                                  |                   |
| Source of data : Korea Occupational Safety and Health Agency (KOSHA)> |                   |
| B. Issuing date   | September 5, 2014 |
| C. Revision number and date   | 0                 |
| D. others   |                   |

○ Source of data : Korea Occupational Safety and Health Agency (KOSHA)>



# MATERIAL SAFETY DATA SHEET

DAEHEUNG CHEMICAL CO., LTD. [www.dhcbond.com](http://www.dhcbond.com)

PGM

Product Name

DM-700(B)

## 1. Product and Company Identification

- A. Product Name DM-700(B)
- B. Recommended use of the chemical and restrictions on use
- Recommended use of the chemical bonding hardner for the PVC sheet and film to wood and plastic, hard board, wood based materials, resin felt, etc.
  - Restrictions on use of the product Hazardous material
- C. Manufacturer/Supplier/Distributor Information
- Name DAEHEUNG CHEMICAL CO., LTD.
  - Address 68, Sandan-ro 64beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea
  - Emergency phone number 82-31-668-1424

## 2. Hazards identification

- A. Hazard-Risk Classification
- Acute toxicity(oral) : Category 4
  - Acute toxicity(inhalation:steam) : Category 1
  - Acute toxicity(inhalation:mist) : Category 2
  - Skin corrosion / Irritation : Category 2
  - Serious eye damage / Irritation : Category 2
  - Reproductive toxicity : Category 1
  - Skin Sensitization : Category 1
  - Carcinogenic : Category 2
  - Target Organ Toxicity (Single Exposure) : Category 1
  - Target Organ Toxicity (Repeated Exposure) : Category 1
  - Chronic hazards to the aquatic environment : Category 2

### B. Label elements including precautionary statements

- Symbol



- Signal Word Danger
- Hazard-Risk Statement
- H302 Harmful if swallowed
  - H315 Causes skin irritation
  - H317 May cause an allergic skin reaction
  - H319 Causes serious eye irritation
  - H330 Fatal if inhaled
  - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
  - H336 May cause drowsiness or dizziness
  - H351 Suspected of causing cancer
  - H411 Toxic to aquatic life with long lasting effects
- Precautionary Statement
- Prevention
- P201 Obtain special instructions before use
  - P202 Do not handle until all safety precautions have been read and understood

Prevention	<p>P260 Do not breathe dust/fume/gas/mist/vapours/spray</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray</p> <p>P264 Wash ... thoroughly after handling</p> <p>P270 Do not eat, drink or smoke when using this product</p> <p>P271 Use only outdoors or in a well-ventilated area</p> <p>P273 Avoid release to the environment</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection</p> <p>P281 Use personal protective equipment as required</p> <p>P284 Wear respiratory protection</p> <p>P285 In case of inadequate ventilation wear respiratory protection</p>
Response	<p>P301+312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell</p> <p>P302+352 IF ON SKIN : Wash with soap and water</p> <p>P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing</p> <ul style="list-style-type: none"> <li>• P304+341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing</li> </ul> <p>P305+351+338 IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing</p> <p>P307+311: IF exposed: Call a POISON CENTER or doctor/physician</p> <p>P308+P313 IF exposed or concerned : Get medical advice/attention</p> <ul style="list-style-type: none"> <li>• P310: Immediately call a POISON CENTER or doctor/physician</li> </ul> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell</p> <p>P314 Get Medical advice/attention if you feel unwell</p> <p>P330 Rinse mouth</p> <p>P332+313 If skin irritation occurs: Get medical advice/attention</p> <p>P333+313 If skin irritation or a rash occurs: Get medical advice/attention</p> <p>P337+313 If eye irritation persists get medical advice/attention</p> <p>P342+311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician</p> <p>P362 Take off contaminated clothing and wash before reuse</p> <p>P363 Wash contaminated clothing before reuse</p> <p>P391 Collect spillage</p>
Storage	<p>P403+233: Store in a well ventilated place. Keep container tightly closed</p> <p>P405: Store locked up</p>
Disposal	<p>P501 Dispose of contents/container to ...</p>

C. Other Hazard-Risk which are not included in the classification criteria (e.g. dust explosion hazard)

	METHYLENE DIPHENYLDIISOCYANATE	ISOCYANIC ACID, POLYMETHYLENEPOLYLHE NYLENE ESTER	DICHLOROMETHA NE
<b>Health</b>	3	N/A	2
<b>Fire</b>	1	N/A	1
<b>Reactivity</b>	1	N/A	0

### 3. Composition/Information on ingredients

Chemical Name	Other name	CAS number	Content(%)
DICHLOROMETHANE	Methylene Chloride	75-09-2	85~75
METHYLENE DIPHENYLDIISOCYANATE	2-PROPANONE	101-68-8	
ISOCYANIC ACID, POLYMETHYLENEPOLYLHENYLENE ESTER	Bis(P-isocyanatophenyl)methane	9016-87-9	15~25



#### 4. First aid measures

A. Eye contact	IF IN EYES: Wash carefully with water for several minutes. Remove contact lenses, if possible. Easy to do.  If eye irritation persists, Consult a physician if irritation persists.
B. Skin contact	Skin (or hair): Take off immediately all contaminated clothing or remove the Keep. Rinse skin with water / shower.  If skin irritation occurs, obtain medical advice Keep.  Take off immediately all contaminated clothing or remove the Keep.  Wash skin with soap and water.
C. Inhalation	Do not induce vomiting.  Excessive dust, or fumes when exposed to clean air removed by coughing or other symptoms and Seek medical attention if you have.
D. Ingestion	Seek immediate medical advice.  Do not induce vomiting.
E. Indication of immediate medical attention and notes for physician	Medical personnel are aware of the material and to take precautions to protect.

#### 5. Fire-Fighting measures

A. Suitable (and unsuitable) extinguishing media	Water spray, foam, dry powder  When to do Fire-Fighting, use dry sand or earth.
B. hazards arising from the chemical (e.g. nature of any hazardous combustion products)	Highly flammable liquid and vapor.  Vapors may form explosive mixtures with air.  The steam explosion hazard at Indoor, outdoor, drain.
C. Special protective equipment and precautions for fire-fighters	In case of fire: Wear self-contained breathing apparatus.  Cool tanks/drums with water spray/remove them into safety.

#### 6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures	Use water spray/stream to protect personnel and to cool endangered containers.  Remove product from area of fire.  Wear suitable protective clothing, gloves and eye/face protection.  Stop leak if safe to do so. Remove all sources of ignition.  In case of fire: Wear selfcontained breathing apparatus.  Evacuate unnecessary personnel. Remove all sources of ignition. Stop leak if safe to do so. Eliminate leaks immediately.
B. Environmental precautions and protective procedures	Avoid release to the environment  Waterways, sewers, basements, and Prevent entry into confined spaces.
C. Methods and materials for containment and cleaning up	Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).  Collect in closed containers for disposal.  Dispose of this material and its container to hazardous or special waste collection point.

#### 7. Handling and storage

A. Precautions for safe handling	Do not handle until all safety precautions Read and understand all safety precautions.  Wear suitable chemical resistant gloves, safety goggles, dust mask and other protective clothing.  Use in the well-ventilated areas. Prevent build-up electrostatic charge(by grounding).  Shower and eye bath. Keep away from acidic material.  Be careful to high temperatures.
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B. Conditions for safe storage (including any incompatibilities)	Store in its original container in a cool environment, keep away from heat, spark, and open flame. Ground containers during storage and transfer operations to avoid static spark.  Ideal storage temp. range for ease of handling is 10 ~ 27 °C  Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
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## 8. Exposure controls & personal protection

A. Control parameters (e.g. occupational exposure limit values, biological limit values)	
– Occupational exposure limit values	
DICHLOROMETHANE	TWA – 50ppm 175mg/m <sup>3</sup>
METHYLENE DIPHENYLDIISOCYANATE	TWA – 0.005ppm 0.055mg/m <sup>3</sup>
– ACGIH limit values	
METHYLENE DIPHENYLDIISOCYANATE	TWA 0.005 ppm
– Biological limit values	No data available
B. Appropriate engineering controls	Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Provide adequate ventilation.
C. Personal protective equipment	
– Respiratory protection	The filter class must be suitable for the maximum contaminant concentration(gas/vapour/aerosol/particulates) that may arise when handling the product.  If the concentration is exceeded, closed-circuit breathing apparatus must be used!  In case of fire: Wear self contained breathing apparatus.
– Eye protection	Wear eye protection/face protection.
– Hands protection	Wear proper chemical resistant gloves.
– Body protection	Wear proper Protective clothing.

## 9. Physical and chemical properties

A. Appearance	
Physical state	Viscous liquid
Color	Yellowish clear
B. Odour	Solvent
C. Odour threshold	No data available
D. pH	Not Applicable
E. Melting point/freezing point	– 95 °C
F. Initial boiling point and boiling range	40 °C
G. Flashing point	No data available
H. Evaporation rate	No data available
I. Flammability(solid, gas)	Can explode if exposed to slight heat.
J. Upper/lower flammability or explosive limits	25% / 12%
K. Vapor pressure	400mmHg (at 24°C)
L. Solubility	Unsoluble in water
M. Vapor density	2.9
N. Relative density	1.31
O Partition coefficient:n-octanol/water	Not Applicable
P. Auto-ignition temperature	556 °C
Q. Decomposition temperature	No data available
R. Viscosity	Less than 100cps
S. Formula mass	No data available

## 10. Stability and reactivity

A. Chemical stability and possibility of hazardous reactions	Stable under normal conditions.
B. Conditions to avoid	Keep away from heat/sparks/open flames/hot surfaces – No smoking
C. Incompatible materials	Flammable material
D. Hazardous decomposition products	CO, CO <sub>2</sub> , nitrogen compounds, hazardous gas etc.

## 11. Toxicological information

A. Information on the likely routes of exposure	No data available
B. Health hazards information	
– Acute toxic	
Oral	
DICHLOROMETHANE	LD50 1600 mg/kg Rat
METHYLENE DIPHENYLDIISOCYANATE	LD50 31600 mg/kg Rat
ISOCYANIC ACID, POLYMETHYLENEPOLYLHENYLENE ESTER	LD50 49000 mg/kg Rat
Inhalation	
DICHLOROMETHANE	LC50 53 mg/l 6 hr
METHYLENE DIPHENYLDIISOCYANATE	LC50 0.369 mg/l 4 hr Rat
ISOCYANIC ACID, POLYMETHYLENEPOLYLHENYLENE ESTER	LC50 0.49 mg/kg 4 hr Rat
Dermal	
ISOCYANIC ACID, POLYMETHYLENEPOLYLHENYLENE ESTER	LD50 > 9500 mg/kg Rabbit
– Skin corrosive/irritant	
DICHLOROMETHANE	Skin – rabbit – Mild skin irritation
METHYLENE DIPHENYLDIISOCYANATE	Skin – rabbit – skin irritation
– Serious eye damage/eye irritation	
DICHLOROMETHANE	Eye irritation
METHYLENE DIPHENYLDIISOCYANATE	Eye irritation
– Carcinogenicity	
IARC	Group 3
ACGIH	A4
NTP	R

## 12. Ecological information

A. Aquatic and terrestrial ecotoxicity	
– Fish	
DICHLOROMETHANE	LC50 5.2 mg/l 72 hr
– Shellfish	
DICHLOROMETHANE	EC50 1682 mg/l 48 h
– Bird	No data available
B. Persistence and degradability	
– Persistence	

ISOCYANIC ACID,  
POLYMETHYLENEPOLYLHENYLENE ESTER

log Kow 10.46

C. Bioaccumulative potential

– Concentrated Castle

DICHLOROMETHANE

BCF 40

– Biodegradable

DICHLOROMETHANE

13 (%)

D. Mobility in soil

No data available

E. Other adverse effects

No data available

### 13. Disposal considerations

A. Disposal method

Destroy the product by incineration

B. Disposal precaution

Destroy the product by incineration

### 14. Transport information

A. UN number

2810

B. UN proper shipping name

TOXIC LIQUID, ORGANIC, N. O. S.

C. Transport hazard class:

6

D. Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises:

F–A, S–A

### 15. Regulatory information

A. Industrial Safety and Health Act

Article 39 (Management, etc. of Harmful Agents)

Article 41 (Preparation, Keeping, etc. of Material Safety Data Sheet)

B. Toxic Chemical Control Act

Not Applicable.

C. Dangerous Material Safety Control Act

METHYLENE

The 4th type, the 4st petroleum type 6000ℓ

DIPHENYLDIISOCYANATE

D. Wastes Management Act

Designated Wastes

E. Other requirements in domestic and other countries

– Domestic

Not Applicable.

– Other countries

CERCLA

DICHLOROMETHANE

453.599 kg 1000 lb

METHYLENE

2267.995 kg 5000 lb

DIPHENYLDIISOCYANATE

EU regulations

DICHLOROMETHANE

Carc. Cat. 3; R40

METHYLENE

Carc. Cat.: R40 Xn; R20–48/20 Xi; R36/37/38 R42/43

DIPHENYLDIISOCYANATE

EU regulations

DICHLOROMETHANE

R40

METHYLENE

R20, R36/37/38, R40, R42/43, R48/20

DIPHENYLDIISOCYANATE

EU regulations

DICHLOROMETHANE

S2, S23, S24/25, S36/37

METHYLENE

S1/2, S23, S36/37, S45

DIPHENYLDIISOCYANATE

## 16. Other information

### A. Information source and references

Source of data : Korea Occupational Safety and Health Agency (KOSHA)>

B. Issuing date September 5, 2014

C. Revision number and date 0

D. others

☐ Source of data : Korea Occupational Safety and Health Agency (KOSHA)>