



MATERIAL SAFETY DATA SHEET

DAEHEUNG CHEMICAL CO., LTD. www.dhcbond.com



Product Name	DH Foam
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1. Product and Company Identification

- A. Product Name DH Foam
- B. Recommended use of the chemical and restrictions on use
- Recommended use of the chemical Window Frame Fixing and Filling, Insulation and Sound-Proof, Insecticide and other hole filling.
 - Limitations on use of the product Prohibit on sunny, outer locations. Filling the inside parts.
- 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 gas: class 1
 - High-pressure gas: Liquefied gas
 - Acute-Toxicity (inhale: gas): Class 2
 - Acute-Toxicity (inhale: dust/mist): class 3
 - SKIN CORROSION / IRRITATION: class 2
 - Serious eye damage / eye irritation: class 2
 - Respiratory sensitization: class 1
 - Skin sensitization: class 1
 - Carcinogenic: class 1A
 - Reproductive toxicity: class 2
 - Specific target organ toxicity (Repeated Exposure): Class 1

B. Label elements including precautionary statements

- Symbol



- Signal Word

Danger

- Hazard-Risk Statement

Extremely flammable aerosol
High-pressure gases are included: Can be exploded if heated.
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Causes damage fertility or the unborn child
Prolonged or repeated exposure may cause damage to the body.

- Precautionary Statement

Prevention

Obtain the manual before use.
Do not handle until all safety precautions have been read and understood
Keep away from heat/sparks/open flames/hot surfaces – No smoking
Take anti-static measures
Avoid inhalation of mists, fumes, vapors, gases, sprays.

Prevention	<p>Wash the treated area thoroughly after handling.</p> <p>Do not smoke, drink or eat when using this product.</p> <p>Please treat only outdoors or in a well-ventilated area.</p> <p>Wear protective gloves, protective clothing, safety glasses, face shield.</p>
Response	<p>Wear appropriate personal protective equipment</p> <p>If swallowed, call a doctor immediately</p> <p>IF ON SKIN: Wash with plenty of soap and water.</p> <p>If skin or hair is contaminated, remove all clothing off or wash skin with water.</p> <p>IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>Do not induce vomiting.</p> <p>If skin irritation occurs, obtain medical attention, advice please.</p> <p>If eye irritation persists, please seek medical attention and advice.</p> <p>Take off and contaminated clothing and wash before re-use.</p> <p>In case of gas-leakage fire, do not try to turn off the fire if you cannot stop the leakage safely.</p>
Storage	<p>Please remove all sources of ignition if possible to safely handle</p> <p>Store in a well-ventilated place and Keep cool</p> <p>Keep container well-ventilated place with being tightly closed.</p>
Disposal	<p>Dispose of the contents and container in accordance with the relevant laws and regulations</p>

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

	Butane	Bis(p-isocyanatophenyl) methane	Di-methyl ether	Propane
Health	1	3	2	1
Fire	4	1	4	4
Reactivity	0	1	1	0

3. Composition/Information on ingredients

Ingredients	Other name	CAS number	Content(%)
Iso-Butane	-	75-28-5	5~10
bis methane	-	101-68-8	5~10
1-Chloro-2-propanol phosphate	-	13674-84-5	3~5
MDI	-	6425-39-4	0.1~1
di-methyl ether	-	115-10-6	5~10
Propane	-	74-98-6	3~5
Chloro-Alkanes (C=14-17)	-	85535-85-9	10~15
Mixture	-	NCO Prepolymer	50~60

4. First aid measures

A. Eye contact	<p>Wash eyes cautiously with water for several minutes.</p> <p>Remove contact lens.</p> <p>Continue Rinsing.</p> <p>If eye irritation persists, seek medical advice.</p>
B. Skin contact	<p>See a doctor if you experience skin irritation or erythema.</p> <p>For hot material, to eliminate heat, immerse or rinse the affected area with large amount of cold water.</p> <p>Upon contact with the material, rinse skin and eyes with flowing water immediately for more than 20 minutes.</p> <p>If contacted with liquefied gas, please melt the area with lukewarm water.</p>

C. Inhalation	By inhalation, if breathing is difficult, move to fresh air and keep at rest in a position comfortable for breathing. Immediately, see a doctor. If exposed to the excessive amount of dust or fume, remove with clean air. If cough or other symptoms, take a medical attention.
D. Ingestion	If there is a risk of exposure or exposure, obtain medical attention, advice please. Does not perform mouth-to-mouth resuscitation if swallowed or inhaled. Use appropriate medical respiratory apparatus.
E. Indication of immediate medical attention and notes for physician	When exposed, contact the medical team and take a special first-aid measures. Fully aware of the substance and Take precautionary measures.

5. Fire-Fighting measures

A. Suitable (and unsuitable) extinguishing media	Alcohol foam, carbon dioxide, water spray jet, Fine water spray Extinguishment by smothering use dry sands or soils.
B. Special protective equipment and precautions for fire-fighters	In case of fire, occurring hazardous substances CO, HCL, and other small quantity's HCN, HF, HBR gas Extremely Flammable gas High-pressure gas is included: If heated, it can be exploded. If heated, the container can be exploded. By heat, spark, and flames, it can be easily ignited. Some can burn but does not ignite easily. Vapors can move until the ignition source and have the possibility of the flash back. The cylinders exposed to fire can emit a flammable gas. Non-flammable materials itself does not burn, but decomposition by heating can cause the corrosive, toxic fumes. Some leave a flammable residue after evaporation, so beware.
C. Advice for firefighters	Wear protective equipment, and equip self-contained breathing equipment. Please extinguish by maintaining a safe distance out of the area. Please move containers from fire area if without risk.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures	Banning the persons who do not wear protective equipment Ensure adequate ventilation Avoid contact to skin or eye (use protective goggle)
B. Environmental precautions and protective procedures	Do not empty into drains / surface water / ground water
C. Methods and materials for containment and cleaning up	Do not remove chemically but remove mechanically. Handling contaminated material as waste.

7. Handling and storage

A. Precautions for safe handling	Keep a well-ventilated workshop. Avoid sources of ignition such as open flames, sparks. Turn off electrical equipment. NO Smoking NO Welding Do not empty into drains
B. Conditions for safe storage (including any incompatibilities)	Regulations shall apply to aerosol storage. Adequate ventilation facilities to warehouse and workshop Keep in a cool, dry place. Should be kept at or below 30 °C
B. Conditions for safe storage (including any incompatibilities)	Do not store with flammable liquids. Do not store with food, and other consumer goods

B. Conditions for safe storage (including any Storage Class (VCI–Storage Class): 2B (BRD) incompatibilities)

8. Exposure controls & personal protection

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

– Local regulation

Butane	TWA – 800 ppm 1900mg/m ³
Bis methane	TWA – 0.005ppm 0.055mg/m ³
Dimethyl ether	No data
Propane	No data

– ACGIH regulation

Butane	TWA 1000 ppm
Bis methane	TWA 0.005ppm
Dimethyl ether	No data
Propane	No data

– Biological limit values

No data available.

B. Appropriate engineering controls

Please use process isolation, local exhaust, or other engineering controls to adjust the air levels below the exposure guidelines.

C. Personal protective equipment

– Engineering Controls

Check Sufficient Exhaust State

– Respiratory protection

Use appropriate respirator when there is not enough of an exhaust ventilator

– Eye protection

Use protective goggle

– Hands protection

Use appropriate protective gloves

– Body protection

Wash hands before break and after work

Avoid skin contact

Do not eat, drink or inhale during the work

Immediately take off the contaminated costumes.

Do not inhale the alcohol during the work.

– Skin protection

Wear Protective costumes

– Overseas exposure standards

Chemical Name	OSHA
Dipenylmethane-4, 4' – diisocyanate	0.020 ppm ceiling
Higher Oligomers of M0†	0.200 mg/m ³
Dimethylether (DME)	1.000 ppm TWA

9. Physical and chemical properties

A. Appearance

Physical state Liquid

Color Dark brown

B. Odour

Musty smell slightly during rigging

C. pH

No data available

D. Initial boiling point and boiling range

No data available

E. Flashing point

– 41 °C (DME), – 60 °C (Butane)/ – 104.4 °C (Propane)

F. Explosive

Heated to above 50 °C the vessel may be ruptured.

The contents has explosive and combustible, can be formed the mixture.

Avoid sources of ignition and open flame, keep the temperature displayed on the container.

G. Decomposition temperature

No data available

H. Vapor pressure

about 5,000 mbar (20 °C), about 10,000 mbar (50 °C)

I. Density

1.126 g/cm³ (20 °C)

J. Bulk density

No data available

K. Viscosity

1,000cps(Brookfield Viscometer, 20°C)

Viscosity(Kinematic)	No data available
L. Explosive properties	No data available
M. Solubility(qualitative)	Non-soluble
N. Solidification temperature	No data available
O. Melting point	No data available
P. Flammability	No data available
Q. Auto-ignition temperature	328 °C (DME), 430 °C (Butane), 450 °C (Propane)
R. Explosive limits	Butane: 1.8 % ~ 8.4 %, Propane: 2.1% ~ 9.5 %, DME: 3.4% ~ 18 %, Vapor Mixture: about 6%
S. Partition coefficient(n-octanol/water)	No data available
T. Evaporation rate	No data available
U. Vapor density	No data available
V. Oxidizing properties	No data available
W. Molecular Weight	No data available

10. Stability and reactivity

A. Conditions to avoid	If used in accordance with the guidance, no decomposition
B. Materials to avoid	CO ₂ occurs with the reaction of water. Within a sealed container, reacts with amines, alcohols, acids, alkalis which increased the pressure.
C. Hazardous decomposition products	No case of the intended purpose

11. Toxicological information

A. Information on the likely routes of exposure	Explosion due to some shock to the container may bring burst of the reactants. Can be harmful in the liquid state but when after solidifying, it is harmless to the body. Avoid strong shock to the container.
B. Health hazards information	
- Acute toxic	No data available
- Skin corrosive/irritant	Irritation of the mucous membranes and skin
- Serious eye damage/eye irritation	Cause damage to the cornea inflammation and restitution
- Respiratory sensitization	Sense organs may be more sensitive by inhalation
- Carcinogenicity	No data available
- Germ cell mutagenicity	No data available
- Reproductive toxicity	No data available

12. Ecological information

A. Aquatic and terrestrial ecotoxicity	This product is considered practically non-toxic to aquatic organisms such as fish and bacteria.
B. Persistence and degradability	The biodegradability of this product is very low. When it becomes solid, difficult to decompose to any material.
C. Bioaccumulative potential	Prevent not to drain to the wastewater, soil, surface water.
D. Mobility in soil	
E. Other adverse effects	When it is solidified as a result of solid-state, it is harmless to humans or creatures.

13. Disposal considerations

A. Waste treatment methods	Dispose of waste and residues in accordance with local authority requirements.
B. Recommended disposal	Incinerated, or disposed of in accordance with relevant laws.
C. Disposal precautions	Should be discarded after subtracting the compressed gas in the container completely.

14. Transport information

A. Transport over land ADR/RID	Class: 2 Number/Letter: 10b1 2nd numbering of tanks panel: 1950 Designation of goods: 1950 Aerosol
B. Transport over sea IMDG	Class : 2.1 UN-No. : 1950 PG/EmS/MFAG: /2-13/a Proper shipping name: Aerosol (Flammable Gas Label)
C. Transport by air ICAO/IATA)	Class: 2.1 UN/ID No: 1950 PG: II Pkg-Instr. (Passenger air): 203 Pkg-Instr. (Cargo air. Only): 203 Proper shipping name: Aerosol, flammable Gas Label
D. Inland Trucking	Class: 2 Number/Letter: 10b1

15. Regulatory information

A. Regulated by the Occupation Safety and Health Act	In accordance with Occupational Health and Safety Act, this product is the object which should be written and placed with applications and warning signs and in case of transfer and provision, this material also transferable or to be provided.
B. Regulated by harmful chemical Substances	These products are target materials for the report by the High-Pressure Gas Safety Control and warning signs.
- Regulated by the local and foreign country's Act	Not Applicable.
- Germany	
- Hazardous Symbols	F+, High-Flammable Materials Xn, Hazardous Materials
- Components	Diphenylmethane-4, 4' - di-isocyanate (MDI)
- Hazardous Warnings	R 36/37/38 Irritant to eye, respiratory, skin
- Safety Warnings	1) Keep out of reach of the children 2) In case of eye contact, wash immediately with a large amount of water and seek a doctor's help 3) Wear an appropriate glove, goggle, facial protector. 4) If exhaust insufficient, suitable respiratory equipment should be worn. 5) Accident, or if there is a risk, seek medical help immediately. 6) If swallowed, seek medical help immediately and show the product container or label.
- Additional Marks:	Including Isocyanate. Comply with the manufacturer's instructions.

16. Other information

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

B. Issuing date	April 22, 2014
C. Revision number and date	0
D. others	

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