

SAFETY DATA SHEET

DIBK(Diisobutyl Ketone)

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1. IDENTIFICATION

A. Product name

- DIBK(Diisobutyl Ketone) [MSDS-007]

B. Recommended use and restriction on use

- General use : Solvent
- Restriction on use : Not available

C. Manufacturer / Supplier / Distributor information

o Manufacturer information

- Company name : KUMHO P&B CHEMICALS.INC
- Address : 218, Yeosusandan 2-ro, Yeosu, Jeollanamdo, Korea
- Dept. : Environment & Safety Team
- Telephone number : +82-61-688-3682
- Emergency telephone number : +82-61-688-3682
- Fax number : 061-688-3686

o Supplier/Distributor information

- Company name : KUMHO P&B CHEMICALS
- Address : East Wing 8F, SignatureTowers Seoul, 100 Cheonggyecheon-ro, jung-gu, Seoul,
- Dept. : Acetone/MIBK
- Telephone number : 82-2-6961-3465,3482
- Emergency telephone number : 82-2-6961-3465,3482
- Fax number : 02-6961-3490,3492
- E-mail address : solvent_domestic@kpb.co.kr

2. HAZARD IDENTIFICATION

A. GHS Classification

- Flammable liquids : Category3
- Serious eye damage/irritation : Category2B
- Specific target organ toxicity(Single exposure) : Category3(Respiratory tract irritation)
- Aspiration hazard : Category2

B. GHS label elements

o Hazard symbols



o Signal words

- Warning

o Hazard statements

- H226 Flammable liquid and vapour
- H305 May be harmful if swallowed and enters airways
- H320 Cause eye irritation.

- H335 May cause respiratory irritation.

o **Precautionary statements**

1) Prevention

- 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/lighting/equipment.
- P242 Use only non-sparking tools. Flammable liquids (chapter 2.6) 1, 2, 3
- P243 Take precautionary measures against static discharge.
- P261 Avoid breathing gas/mist/vapours/spray.
- P264 Wash hands thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.

2) Response

- P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
- P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P312 Call a POISON CENTER or doctor/physician if you feel unwell.
- P331 Do NOT induce vomiting.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P370+P378 In case of fire: Use Suitable extinguishing media for extinction(Refer Section MSDS 5).

3) Storage

- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.

4) Disposal

- P501 Dispose of contents/container in accordance with local/regional/national/international regulation

C. Other hazards which do not result in classification : (NFPA Classification)

o **NFPA grade (0 ~ 4 level)**

- Health : 1 , Flammability : 2, Reactivity : 0

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Diisobutylketone	2,6-디메틸-5-헵탄온(2,6-DIMETHYL-4-HEPTANONE)	108-83-8	100

4. FIRST AID MEASURES

A. Eye contact

- Do not rub your eyes.
- Immediately flush eyes with plenty of water for at least 15 minutes and call a doctor/physician.
- Get medical attention immediately.

B. Skin contact

- Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
- Laundering enough contaminated clothing before reuse.
- Get medical attention immediately.

C. Inhalation contact

- When exposed to large amounts of steam and mist, move to fresh air.
- Take specific treatment if needed.
- Get medical attention immediately.

D. Ingestion contact

- Please be advised by doctor whether induction of vomit is demanded or not.
- Rinse your mouth with water immediately.
- Get medical attention immediately.
- If swallowed, large amounts of water to drink and do not induce vomiting.

E. Delayed and immediate effects and also chronic effects from short and long term exposure

- Not available

F. Notes to physician

- Notify medical personnel of contaminated situations and have them take appropriate protective measures.

5. FIREFIGHTING MEASURES

A. Suitable (Unsuitable) extinguishing media

- Dry chemical, carbon dioxide, regular foam extinguishing agent, spray
- Avoid use of water jet for extinguishing

B. Specific hazards arising from the chemical

- Not available

C. Special protective actions for firefighters

- Notify your local firestation and inform the location of the fire and characteristics hazard.
- Avoid inhalation of materials or combustion by-products.
- Do not access if the tank on fire.
- Use appropriate extinguishing measure suitable for surrounding fire.
- Wear appropriate protective equipment.
- Keep containers cool with water spray.
- Vapor or gas is burned at distant ignition sources can be spread quickly.
- Due to the extremely low flash point, irrigating fire extinguishing may be less effective when put out a fire.

6. ACCIDENTAL RELEASE MEASURES

A. Personal precautions, protective equipment and emergency procedures

- Wear proper personal protective apparatus as indicated in Section 8 and avoid skin contact and inhalation.
- Ventilate closed spaces before entering.
- Must work against the wind, let the upwind people to evacuate.
- Move container to safe area from the leak area.
- Do not direct water at spill or source of leak.

B. Environmental precautions

- Prevent runoff and contact with waterways, drains or sewers.
- If large amounts have been spilled, inform the relevant authorities.

C. Methods and materials for containment and cleaning up

- Large spill : Stay upwind and keep out of low areas. Dike for later disposal.
- Notification to central government, local government. When emissions at least of the standard amount
- Dispose of waste in accordance with local regulation.
- Appropriate container for disposal of spilled material collected.
- Small leak: sand or other non-combustible material, please let use absorption.
- Wipe off the solvent.
- Dike for later disposal.
- Do not use plastic containers.

7. HANDLING AND STORAGE

A. Precautions for safe handling

- Since emptied containers retain product residue(vapor, liquid, solid) follow all MSDS and label warnings even after container is emptied.

- Avoid contact with incompatible materials.
- Get the manual before use.
- Do not handle until all safety precautions have been read and understood.
- Do not inhale the steam prolonged or repeated.
- Avoid contact with heat, sparks, flame or other ignition sources.

B. Conditions for safe storage, including any incompatibilities

- Do not use damaged containers.
- Do not apply any physical shock to container.
- Avoid direct sunlight.
- Keep in the original container.
- Keep sealed when not in use.
- Collected them in sealed containers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A. Exposure limits

- **ACGIH TLV**
 - [Diisobutylketone] : TWA, 25 ppm (145 mg/m³)
- **OSHA PEL**
 - [Diisobutylketone]:50ppm 290mg/m³

B. Engineering controls

- A system of local and/or general exhaust is recommended to keep employee exposures above the Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. The use of local exhaust ventilation is recommended to control emissions near the source.

C. Individual protection measures, such as personal protective equipment

- **Respiratory protection**
 - Under conditions of frequent use or heavy exposure, Respiratory protection may be needed.
 - Respiratory protection is ranked in order from minimum to maximum.
 - Consider warning properties before use.
 - Any chemical cartridge respirator with organic vapor cartridge(s).
 - Any chemical cartridge respirator with a full facepiece and organic vapor cartridge(s).
 - Any air-purifying respirator with a full facepiece and an organic vapor canister.
 - For Unknown Concentration or Immediately Dangerous to Life or Health : Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece.
- **Eye protection**
 - Wear primary eye protection such as splash resistant safety goggles with a secondary protection face shield.
 - Provide an emergency eye wash station and quick drench shower in the immediate work area.
- **Hand protection**
 - Wear appropriate chemical resistant glove.
- **Skin protection**
 - Wear appropriate chemical resistant protective clothing.
- **Others**
 - Not available

9. PHYSICAL AND CHEMICAL PROPERTIES

A. Appearance	
- Appearance	Liquid
- Color	colorless
B. Odor	keton smell
C. Odor threshold	Not available
D. pH	Not available
E. Melting point/Freezing point	-42 °C
F. Initial Boiling Point/Boiling Ranges	168 °C

G. Flash point	49 °C
H. Evaporation rate	0.2
I. Flammability(solid, gas)	combustible
J. Upper/Lower Flammability or explosive limits	6.2 / 0.8 % (93 °C)
K. Vapour pressure	0.23 kPa (20 °C)
L. Solubility	0.264 g/100mℓ (24 °C)
M. Vapour density	4.9
N. Specific gravity(Relative density)	0.805
O. Partition coefficient of n-octanol/water	2.56 (추정치)
P. Autoignition temperature	396 °C
Q. Decomposition temperature	Not available
R. Viscosity	0.896 cP (70 °F)
S. Molecular weight	142.23

10. STABILITY AND REACTIVITY

A. Chemical Stability

- This material is stable under recommended storage and handling conditions.

B. Possibility of hazardous reactions

- Cylinders exposed to fire may vent and release flammable gas.

C. Conditions to avoid

- Avoid contact with incompatible materials and condition.
- Avoid : Accumulation of electrostatic charges, Heating, Flames and hot surfaces
- Avoid contact with heat, sparks, flame or other ignition sources.

D. Incompatible materials

- Not available

E. Hazardous decomposition products

- May emit flammable vapour if involved in fire.

11. TOXICOLOGICAL INFORMATION

A. Information on the likely routes of exposure

- **(Respiratory tracts)**
 - May be harmful if swallowed and enters airways
 - May cause respiratory irritation.
- **(Oral)**
 - Not available
- **(Eye·Skin)**
 - Cause eye irritation.

B. Delayed and immediate effects and also chronic effects from short and long term exposure

- **Acute toxicity**
 - * **Oral**
 - [Diisobutylketone] : LD50 > 5000 mg/kg Rat (NITE)
 - * **Dermal**
 - [Diisobutylketone] : LD50 > 2000 mg/kg Rat (SIDS)
 - * **Inhalation**
 - Not available
- **Skin corrosion/irritation**
 - Not available
- **Serious eye damage/irritation**
 - Cause eye irritation.
- **Respiratory sensitization**
 - Not available

- **Skin sensitization**
 - Not available
- **Carcinogenicity**
 - * **IARC**
 - Not available
 - * **OSHA**
 - Not available
 - * **ACGIH**
 - Not available
 - * **NTP**
 - Not available
 - * **EU CLP**
 - Not available
- **Germ cell mutagenicity**
 - Not available
- **Reproductive toxicity**
 - Not available
- **STOT-single exposure**
 - May cause respiratory irritation.
- **STOT-repeated exposure**
 - Not available
- **Aspiration hazard**
 - May be harmful if swallowed and enters airways

12. ECOLOGICAL INFORMATION

A. Ecotoxicity

- **Fish**
 - [Diisobutylketone] : LC50 = 140 mg/l 96 hr (SIDS)
- **Crustaceans**
 - [Diisobutylketone] : LC50 = 65 mg/l 24 hr
- **Algae**
 - Not available

B. Persistence and degradability

- **Persistence**
 - [Diisobutylketone] : log Kow 2.56 (SRC)
- **Degradability**
 - Not available

C. Bioaccumulative potential

- **Bioaccumulative potential**
 - Not available
- **Biodegradation**
 - Not available

D. Mobility in soil

- Not available

E. Other adverse effects

- Not available

13. DISPOSAL CONSIDERATIONS

A. Disposal methods

- Since more than two kinds of designaed waste is mixed, it is difficult to treat seperatly, then can be reduction or stabilization by incineration or similar process.
- If water separation is possible, pre-process with Water separation process.
- Dispose by incineration.

- Will be pre-processed by the separation of oil and water.

B. Special precautions for disposal

- The user of this product must disposal by oneself or entrust to waste disposer or person who other's waste recycle and dispose, person who establish and operate waste disposal facilities.
- Dispose of waste in accordance with all applicable laws and regulations.

14. TRANSPORT INFORMATION

A. UN No. (IMDG CODE/IATA DGR)

- 1157

B. Proper shipping name

- DIISOBUTYL KETONE

C. Hazard Class

- 3

D. IMDG CODE/IATA DGR Packing group

- III

E. Marine pollutant

- Not applicable

F. Special precautions for user related to transport or transportation measures

- Local transport follows in accordance with Dangerous goods Safety Management Law.
- Package and transport follow in accordance with Department of Transportation (DOT) and other regulatory agency requirements.
- EmS FIRE SCHEDULE : F-E (Non-water-reactive flammable liquids)
- EmS SPILLAGE SCHEDULE : S-D (Flammable liquids)

15. REGULATORY INFORMATION

A. National and/or international regulatory information

- o **POPs Management Law**
 - Not applicable
- o **Information of EU Classification**
 - * **Classification**
 - [Diisobutylketone] : R10 Xi; R37
 - * **Risk Phrases**
 - [Diisobutylketone] : R10, R37
 - * **Safety Phrase**
 - [Diisobutylketone] : S2, S24
- o **U.S. Federal regulations**
 - * **OSHA PROCESS SAFETY (29CFR1910.119)**
 - Not applicable
 - * **CERCLA Section 103 (40CFR302.4)**
 - Not applicable
 - * **EPCRA Section 302 (40CFR355.30)**
 - Not applicable
 - * **EPCRA Section 304 (40CFR355.40)**
 - Not applicable
 - * **EPCRA Section 313 (40CFR372.65)**
 - Not applicable
- o **Rotterdam Convention listed ingredients**
 - Not applicable
- o **Stockholm Convention listed ingredients**
 - Not applicable
- o **Montreal Protocol listed ingredients**
 - Not applicable

16. OTHER INFORMATION**A. Reference**

- The information contained herein is believed to be accurate. It is provided independently of any sale of the product for purpose of hazard communication. It is not intended to constitute performance information concerning the product. No express warranty, or implied warranty of merchantability or fitness for a particular purpose is made with respect to the product or the information contained herein.
- This Safety Data Sheet was compiled with data and information from the following sources: KOSHA, NITE, ESIS, NLM, SIDS, IPCS

B. Issue date

- 2014-10-31

C. Revision number and Last date revised

- 5 times, 2017-09-28

D. Other

- This SDS is prepared according to the Globally Harmonized System (GHS).