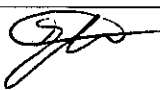


 TAEKWANG IND. CO.,LTD PETROCHEM #1 PLANT	Establishment Date	Revision Date	Revision No.	Total Pages
	1996. 5. 10	2017. 3. 22	8	7

MSDS-010-1
TEREPHTHALIC ACID
(Eng. Version)

SAFETY DATA SHEET

S I G N	PREPARED	CHECKED	APPROVED
			



TAEKWANG IND. CO.,LTD
PETROCHEM #1 PLANT

TEREPHTHALIC ACID

Establishment Date : 1996-05-10
Revision No. : 8
Revision Date : 2017-3-22

Chemical Name	CAS No.	KE No.	UN No.	EU No.
TEREPHTHALIC ACID	100-21-0	KE-02190		202-830-0

1. Product and company identification

- a. Product Name: (to indicate the same name or code as shown in label) TEREPTHALIC ACID
- b. Recommended use of the chemical and restrictions on use:
 Recommended use of the chemical Not Available
 restrictions on use of the chemical Not Available
- c. Manufacturer/Supplier/Distributor Information
 Name TAEKWANG Ind.Co.,Ltd.PETROCHEM #1 PLANT
 Address #154, ShinYeocheon-ro, Nam-gu, Ulsan-city, Korea
 Emergency phone number Day) +82 (0)52-259-9741, 259-8381 Fax No. +82 (0)52 260 6258
 Night) +82 (0)52-259-8723

2. Hazards identification

- a. Hazard-Risk Classification
 Acute toxicity(oral) : Hazard Category 4
 Reproductive toxicity : Hazard Category 2
 Specific target organ toxicity (single exposure) : Hazard Category 3-Respiratory irritation
 Specific target organ toxicity (repeated exposure) : Hazard Category 1

- b. Label elements including precautionary statements
 Symbol



Signal Word

Danger , Warning

Hazard-Risk Statement

H302 Harmful if swallowed
 H335 May cause respiratory irritation
 H361 Suspected of damaging fertility or the unborn child
 H372 Causes damage to organs
 H312 Harmful in contact with skin
 H332 Harmful if inhaled.

Precautionary Statement

Prevention

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/vapours/spray.
 P261 Avoid breathing dust/fume/gas/mist/vapours/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.
 P280 Wear protective gloves/clothing and eye/face protection
 P281 Use personal protective equipment as required.

Response

P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P312 Call a POISON CENTER or doctor/physician if you feel unwell
P314 Get medical advice/attention if you feel unwell.
P330 Rinse mouth.
P321 Specific treatment (see on this label).
P302+P352 IF on skin : Wash with plenty of water
P362+P364 Take off contaminated Clothing and wash it before reuse.
P308+P311 If exposed or concerned : Call a Poison Center/doctor

Storage

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

Disposal

P501 Dispose contents/container. (in accordance with local/regional/national/international regulation to be specified)

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

Health	2
Fire	1
Reactivity	0

3. Composition/Information on ingredients

Chemical Name	TEREPHTHALIC ACID
Other Name	1,4-BENZENEDICARBOXYLIC ACID
CAS Number	100-21-0
Content (%)	100%

4. First aid measures

a. Eye contact	flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately
b. Skin contact	Wash the contaminated area with soap and water for at least 15 minutes. Remove contaminated clothing and shoes. If irritation develops, get medical attention. Wash contaminated clothing and shoes before reuse.
c. Inhalation	Remove from exposure area to fresh air immediately. If person cannot breathe, Should get oxygen care by workers required. If breathing has stopped, give artificial respiration If inhaled, get medical attention immediately.
d. Ingestion	If person is unconsciouse Avoid ingestion. Seek medical attention immediately. If victim is conscious and alert, give 2-4 cupfuls of milk or water.
e. Indication of immediate medical attention and notes for physician	ANTIDOTE : No specific antidote. Treat symptomatically and supportively

5. Fire-Fighting measures

a. Suitable (and unsuitable) extinguishing media	
Suitable extinguishing media	Foam water. extinguishing powder. carbon dioxide.
Unsuitable extinguishing media	Not Available

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|---|--|
| For larger fires | Use water spray, fog or regular foam |
| b. Specific hazards arising from the chemical | |
| Thermal decomposition products | carbon oxide |
| Fire and Explosion hazard | Slight fire hazard |
| | Dust-air mixtures may ignite or explode. |
| c. Special protective equipment and precautions for fire-fighters | Move container from fire area if you can do it without risk. |
| | Do not scatter spilled material with high-pressure water streams |
| | Dike fire-control water for later disposal. |
| | Use agents suitable for type of surrounding fire. |
| | Avoid breathing hazardous vapors. |
| | Keep unwind. |
| | Water or foam may cause frothing. |

6. Accidental release measures

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|--|--|
| a. Personal precautions, protective equipment and emergency procedures | Avoid breathing dust/fume. |
| | Isolate from exposure area, Only authorized person can access to the hazardous and restricted areas. |
| | Sweep up and place in suitable clean, dry containers for reclamation or later disposal. |
| | Keep away from water supply facilities and sewage. |
| b. Environmental precautions and protective procedures | |
| Release to air | Not Available |
| Release to soil | Not Available |
| Release to water | Not Available |
| c. Methods and materials for containment and cleaning up | |
| For small release | Not Available |
| For large release | Not Available |

7. Handling and storage

- | | |
|----------------------------------|---|
| a. Precautions for safe handling | Avoid breathing dust/fume. |
| | Wash body and clothing after use. |
| | Use in a well-ventilated place. |
| | Prevent creating and scattering dust |
| b. Conditions for safe storage | Avoid contact with strong oxidizing agent. |
| | Keep away from heat |
| | Don't vaporize or distill forcibly, do air dry |
| | Store in a closed container. |
| | Keep stable. |
| | Prevent buildup of static electricity. |
| | Store in a closed container. |
| | may occur explosive peroxids |
| | Store in a cool and dry, well-ventilated place. |

8. Exposure controls & personal protection

- | | |
|--|---------------|
| a. occupational exposure limit values, biological limit values | |
| KOSHA | Not Available |

ACGIH	TWA 10 mg/m ³
Biological limit values	Not Available
b. Appropriate engineering controls	Install local ventilation system. Ventilation equipment should be explosion-proof if explosive concentrations of dusts, vapours or fume are present. Comply with limits.
c. Personal protective equipment	
- Respiratory protection	Use respiratory dustproof mask attached the "S" mark of KOSHA, Korea.
- Eye protection	Safety glasses or goggles are recommended for the eye protection from dusts or mists. A business proprietor should install eyes washing facilities near working areas to protect worker's eyes for emergency.
- Hands protection	Use proper chemical resistant gloves to prevent skin contact.
- Body protection	Use proper chemical resistant clothes to prevent repeated and prolonged skin contact.

9. Physical and chemical properties

a. Appearance	
physical state	Solid (crystal or powder)
color	white
b. Odour	Irritant Odour
c. Odour threshold	Not Available
d. pH	2.16 (Sat. Solution)
e. Melting point/freezing point	> 300 °C
f. Initial boiling point and boiling range	Not Available
g. Flashing point	260 °C
h. Evaporation rate	Not Applicable
i. Flammability (solid, gas)	Not Available
j. Upper/lower flammability or explosive limits	0.005 % (dust)
k. Vapor pressure	0.0000092 mmHg (25°C)
l. Solubility	0.28 g/100ml (20°C)
m. Vapor density	Not Applicable
n. Relative density	1.51
o. Partition coefficient: n-octanol/water	1.96
p. Auto-ignition temperature	496 °C
q. Decomposition temperature	Not Available
r. Viscosity	Not Available
s. Formula mass	166.1

10. Stability and reactivity

a. Chemical stability and possibility of hazardous reactions	Stable under normal temperatures and pressure. No polymerization.
b. Conditions to avoid	Keep away from prohibited materials for mixing. Avoid heat, sparks, open flames and other ignition sources.
c. Incompatible materials	oxidizers bases
d. Hazardous decomposition products	Thermal decomposition products may include toxic oxides of carbon.

11. Toxicological information

a. Information on the likely routes of	May cause irritation.
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exposure	No information on significant adverse effects.
b. Health hazards information	
Acute toxic	
Oral	LD50 1960 mg/kg Rat
Skin	LD50 2000 mg/kg Rabbit
Inhalation	Not Available
Skin corrosive/irritant	Weak irritation reported in rabbit and human
Serious eye damage/eye irritation	Weak irritation(500mg, 24hr, rabbit)
Respiratory sensitization	Not Available
Skin sensitization	Skin Sensitization (Guinea Pig) – Negative response – Negative
Carcinogenicity	
Industrial Safety and Health Act	
Notice of Labor	Not Available
IARC	Not Available
OSHA	Not Available
ACGIH	Not Available
NTP	Not Available
Germ Cell Mutagenicity	Dominant lethal mutagenicity test, in vivo Germ cells mutagenicity test of Germ cells, in vivo somatic cell mutagenicity test (Micronucleus test) – Negative
Reproductive toxicity	Reported next generation of weight gain, growth inhibition, survival rate degradation in the capacity for general toxicity in parent animal. Reported respiratory irritation in people.
Specific target organ toxicity (single exposure)	
Specific target organ toxicity (repeated exposure)	Reported Degeneration of organs mucocutaneous, bladder stones in laboratory animals
Aspiration hazard	Not Available

12. Ecological information

a. Aquatic and terrestrial ecotoxicity	
Fish	LC50 > 10 mg/l 96 hr
Crustacea	Not Available
Aves	Not Available
b. Persistence and degradability	
Persistence	Not Available
Degradability	Not Available
c. Bioaccumulative potential	
accumulative	Not Available
Bio degradability	74.7 (%)
d. Mobility in soil	Not Available
e. Other adverse effects	Not Available

13. Disposal considerations

a. Disposal method	Observe all federal, state and local regulations when disposing of this substance.
b. Disposal precaution	If Stated in Waste Management Act, Consider notice stated in the regulation.

14. Transport information

a. UN number	UN No transportation of hazardous substances classified information)
b. UN proper shipping name	Not Applicable
c. Transport hazard class	Not Applicable
d. Packing group (if applicable)	Not Applicable

- | | |
|---|----------------|
| e. Marin pollution | Not Applicable |
| 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: | |
| Fire Emergency Response | Not Applicable |
| Release Emergency Response | Not Applicable |

15. Regulatory information

- | | |
|--|----------------|
| a. Industrial Safety and Health Act | Not Available |
| b. Chemical Control Act | Not Available |
| c. Dangerous Material Safety Control Act | Not Available |
| d. Wastes Management Act | Not Available |
| e. Other requirements in domestic and other countries | |
| Domestic | |
| Persistant Organic Pollutants Management Act | Not Applicable |
| Other countries | |
| US (OSHA) | Not Applicable |
| US (CERCLA) | Not Applicable |
| US (EPCRA 302) | Not Applicable |
| US (EPCRA 304) | Not Applicable |
| US (EPCRA 313) | Not Applicable |
| US (Rotterdam Convention material) | Not Applicable |
| US (Stockholm Convention material) | Not Applicable |
| (Montreal Protocol on substances) | Not Applicable |
| EU classified information (final classification results) | Not Applicable |
| EU classified information (risk phrases) | Not Applicable |
| EU classified information (safety phrases) | Not Applicable |

16. Other information

a. Information source and references

National Chemical Information System, National Institute of Environmental Research (<http://ncis.nier.go.kr>)
 ECOTOX Database, EPA(<http://cfpub.epa.gov/ecotox>)
 Hazardous Materials Information Management System, National Emergency Management Agency (<http://hazmat.nema.go.kr>)
 IUCLID Chemical Data Sheet, EC-ECB
 International Chemical Safety Cards(ICSC)(<http://www.nihs.go.jp/ICSC>)
 Corporate Solution From Thomson Micromedex(<http://csi.micromedex.com>)
 Industrial poisoning handbook
 TOXNET, U.S. National Library of Medicine(<http://toxnet.nlm.nih.gov>)
 The Chemical Database, The Department of Chemistry at the University of Akron(<http://uli.chemistry.uakron.edu/erd>)
 ECB-ESIS(European chemical Substances Information System)(<http://ecb.jrc.it/esis>)

- | | |
|-----------------------------|------------|
| b. Establishment date | 1996-05-10 |
| c. Revision number and date | |
| Revision number | 8 |
| date | 2017-3-22 |
| d. others | |