

## GPS Safety Summary

This Product Safety Summary is intended to provide a brief overview of the information on the risk assessment results of the chemical product that we manufacture based on the chemical industry's Global Product Strategy (GPS) to the general public as a social responsibility of a company that manufacture chemical substances.

This summary is not intended to provide technical information including effects on human health and the environment and details of risk assessment. In addition, it is not intended to be prepared as a document to replace a Safety Data Sheet (SDS) or a risk assessment report like a Chemical Safety Report under the REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) (REACH CSR). Although the summary is prepared based on the laws, materials, information and data that are available at the present moment, it does not provide any assurances.

### SUBSTANCE NAME

## Terephthalic acid (Terephthalic acid, CAS No. 100-21-0)

### GENERAL STATEMENT

Terephthalic acid is a white solid. Terephthalic acid is used to make polyethylene terephthalate. Terephthalic acid causes harmful if swallowed, causes eye irritation, may cause respiratory irritation, causes damage to organs (respiratory tract) and may cause damage to organs (urinary bladder) through prolonged or repeated exposure.

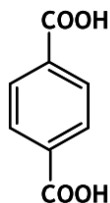
Terephthalic acid is biodegradable and low bioaccumulative.

It is recommended to wear appropriate protective masks, gloves when sampling for manufacturing. To minimize the adverse effects of Terephthalic acid on environmental organisms and control its release into the environment, the sewage equipment should be monitored regularly and the sewage treatment facility should be maintained and inspected in the factory.

### CHEMICAL IDENTITY

Item	Contents
Generic name	Terephthalic acid
Trade name	Terephthalic acid
Chemical name	Terephthalic acid (IUPAC name: Terephthalic acid)
CAS No.	100-21-0
Other numbers	Reference No. listed in the official gazettes (Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc., Industrial Safety and Health Act) (3)-1334 EC No. 202-830-0
Molecular formula	C <sub>8</sub> H <sub>6</sub> O <sub>4</sub>

Structural formula



Other information

None in particular

## USES AND APPLICATIONS

Intended uses of our product Polyethylene terephthalate etc.

## PHYSICAL/CHEMICAL PROPERTIES

Appearance (physical state)	Solid
Color	White
Odor	No information
Specific gravity (relative density)	1.51
Melting point/boiling point	No information /300 °C
Combustibility/flammability	No information
Flash point	260 °C (open cup)
Limit of combustion or explosion	1.3 - 7.7 vol %
Auto ignition temperature	496 °C
Vapor pressure	1 Pa (20°C)
Molecular weight	166.13
Water solubility	No information
Octanol-water partition coefficient	LogKow : 2

## HEALTH EFFECTS

Effect assessment	Results (GHS <sup>*1</sup> hazard classification)
Acute toxicity (oral ingestion)	Harmful if swallowed (Category 4)
Acute toxicity (inhalation)	Not applicable <sup>*2</sup> (gas) Classification not possible <sup>*3</sup> (vapor) Classification not possible (dust/mist)
Acute toxicity (dermal)	Not applicable
Skin corrosion/irritation	Not classified <sup>*4</sup>
Serious eye damage/eye irritation	Causes eye irritation (Category 2B)
Respiratory sensitization	Classification not possible
Skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Classification not possible
Reproductive toxicity	Classification not possible
Specific target organ toxicity (Single exposure)	May cause damage to organs (respiratory system, Category 3)
Specific target organ toxicity (Repeated exposure)	Causes damage to organs (respiratory system) through prolonged or repeated exposure (Category 1)

Aspiration hazard Source/remarks	<p>May cause damage to organs (urinary bladder) through prolonged or repeated exposure (Category 2)</p> <p>Classification not possible</p> <p><sup>*1</sup>GHS: Globally Harmonized System of Classification and Labelling of Chemicals. This system enables us to classify chemicals by hazard type and degree according to globally harmonized rules.</p> <p><sup>*2</sup>Not applicable: Because the physical properties defined by GHS are not met, the chemical is not included in the target chemicals of the classification.</p> <p><sup>*3</sup>Classification not possible: The data needed for judging classification are not available at all or sufficient data are not collected for classification.</p> <p><sup>*4</sup>Not classified: Hazardousness much lower than the lowest hazard class specified by GHS</p>
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## ENVIRONMENTAL EFFECTS

Effect assessment	Results (GHS hazard classification)
Hazardous to the aquatic environment (acute)	Not classified
Hazardous to the aquatic environment (chronic)	Not classified
Environmental fate/dynamics	Results
Transfer in the environment	Low volatility from water and low soil absorption
Biodegradability	Readily biodegradable
Bioaccumulation	Low bioaccumulative potential
Conclusion of PBT/vPvB	Not judged to be PBT <sup>*</sup> and vPvB <sup>**</sup> .
	<sup>*</sup> PBT: Persistent, bioaccumulative and toxic (Remaining in the environment and having high bioaccumulative and strong toxic properties)
	<sup>**</sup> vPvB: very Persistent and very Bioaccumulative (Readily remaining in the environment and having very high bioaccumulative property)

## EXPOSURE

Details	No.	Potential exposure in the process of use of our products (exposure route)
Occupational Exposure	1-1	Thorough sampling and transfer of substance (inhalation, skin/eye contact). However Terephthalic acid is produced in a closed process, potential for occupational exposure is extremely low.
Consumer exposure	2-1	This material is not used by consumers and therefore the potential for consumer exposure is extremely low.
Environmental exposure	3-1	Through sampling and transfer of substance. However Terephthalic acid is manufactured in a closed system process, the possibility of environment release is very low. It is gas at normal temperature and normal pressure. In the case of environmental release, though it is considered to disperse into air and water, it is expected to be degraded in water rapidly.
Note		If there is a potential for exposure in other uses, take appropriate measures in reference to the risk management recommends.

## RISK MANAGEMENT RECOMMENDATIONS

Details	No.	Management recommendations based on our risk assessment results
Occupational Exposure	1-1	Wear appropriate protective masks, clothing and gloves made of materials that Terephthalic acid does not penetrate during sampling operation. While handling Terephthalic acid, manage and control its environmental concentration so that it is lower than the threshold limit value 10 mg/m <sup>3</sup> (TWA – time weighted average value) recommended by ACGIH. The operation manager instructs workers how to select and use the appropriate protective equipment and how to manage the work place.
Consumer exposure	2-1	None
Environmental exposure	3-1	Terephthalic acid may affect environment if leaked. Take measures to prevent leakage, and take due care in daily management and handling.
Other warnings		None
Note		For the measures and actions to be taken for regular handling, emergency situations, disposal and transportation, see Section 4, 5, 6, 7, 8, 13 and 14, SDS issued by Mitsubishi Chemical Corporation.

## STATE AGENCY REVIEW

Assessment document	Review condition
OECD HPV	<a href="http://www.chem.unep.ch/irptc/sids/OECDSEIDS/100-21-0.pdf">http://www.chem.unep.ch/irptc/sids/OECDSEIDS/100-21-0.pdf</a>
National Institute of Evaluation and Technology (NITE) - Preliminary Risk Assessment of Chemical Substances	<a href="http://www.safe.nite.go.jp/risk/files/pdf_hyoukasyo/205riskdoc.pdf">http://www.safe.nite.go.jp/risk/files/pdf_hyoukasyo/205riskdoc.pdf</a>
Ministry of Environment - Preliminary Environment Risk Assessment of Chemical Substances	<a href="http://www.safe.nite.go.jp/risk/files/pdf_hyoukasyo/205riskdoc.pdf">http://www.safe.nite.go.jp/risk/files/pdf_hyoukasyo/205riskdoc.pdf</a>
REACH	<a href="http://apps.echa.europa.eu/registered/registered-sub.aspx">http://apps.echa.europa.eu/registered/registered-sub.aspx</a>

## REGULATORY INFORMATION / LABELLING INFORMATION

### Main regulatory information

Law	Regulatory condition
UN class	None
UN No.	None
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc.	Priority Assessment Chemical Substances
Industrial Safety and Health Act	Article 57-2 Paragraph 2 Substance Requiring notification
Pollutant Release and Transfer Register	Class I designated chemical substances

Labelling information

Pictograms or symbols



Signal Word

Danger

Hazard statement

- Harmful if swallowed
- Causes eye irritation
- May cause respiratory irritation
- Causes damage to organs (respiratory tract)
- May cause damage to organs (urinary bladder) through prolonged or repeated exposure

**CONTACT INFORMATION WITHIN COMPANY**

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**DATE OF ISSUE / REVISION, ADDITIONAL INFORMATION**

Ver. 1 : Issued on march 26, 2014 (JP revised version 1: issued on July 30, 2012)  
Revised : None  
Special remarks: None