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Safety Data Sheets

1. Identification

Product name :4,4'-Methylenebis(phenyl isocyanate)

Name of supplier :JUNSEI CHEMICAL CO., LTD.

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Product code(SDS NO) :33375jis_E1-1

2. Hazards identification

GHS classification and label elements of the product

GHS classification

HEALTH HAZARDS

Acute toxicity inhalation : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage /eye irritation : Category 2

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Carcinogenicity : Category 2

Specific target organ toxicity – single exposure; Respiratory tract irritation Category 3

Specific target organ toxicity–repeated exposure : Category 2

(Note) GHS classification without description : Not applicable/Out of classification/Not classifiable



Signal word : Danger

HAZARD STATEMENT

Harmful if inhaled

Causes skin irritation.

Causes eye irritation

May cause allergy or asthma symptoms or breathing difficulties if inhaled

May cause an allergic skin reaction

Suspected of causing cancer

May cause respiratory irritation

May causes damage to organs following repeated exposure.

PRECAUTIONARY STATEMENT

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves.

Wear face protection.

Use personal protective equipment as required.

In case of inadequate ventilation wear respiratory protection (as specified by the manufacturer/supplier or the competent authority.)

Response

Get medical advice/attention if you feel unwell.

Take off contaminated clothing and wash before reuse.

IF ON SKIN: Wash with plenty of soap and water.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

IF exposed or concerned: Get medical advice/attention.

If skin irritation or rash occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

Storage

Store locked up.

Store in well-ventilated place. Keep container tightly closed.

Disposal

Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients

Substance/Preparation :Substance

Common name, synonyms :4,4'-methylenediphenyl diisocyanate

Ingredient name:4,4'-Methylenebis(phenyl isocyanate)

content(%):95.0 <

Chemical formula:C15H10N2O2

Chemicals No, Japan:4-118

CAS No.:101-68-8

MW:250.26

HAZCODE_EU:2_H315; 1_H317; 2_H319; 4_H332; 1_H334; 3_H335;2_H373**2_H351

ECNO:202-966-0

4. First-aid measures

General procedures

Get medical attention/advice if you feel unwell.

IF exposed or concerned: Get medical attention/advice.

IF INHALED

Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

IF ON SKIN(or hair)

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES :

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures

Suitable extinguishing media

In case of fire, use dry powder, CO₂

Specific hazards arising from the chemical

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for fire-fighters

Wear fire/ flame resistant/retardant clothing.

Wear cold insulating gloves/face shield/eye protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area after material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Avoid release to the rivers, lakes, ocean, groundwater.

Methods and materials for neutralization, containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapours/spray.

Use personal protective equipment as required.

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

Exhaust/ventilator

Exhaust/ventilator should be available.

Safety treatments

Avoid contact with skin.

Avoid contact with eyes.

Avoid breathing dust, vapor, mist, or gas.

Safety Measures/Incompatibility

Obtain special instructions before use.

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

When using do not eat, drink or smoke.

Conditions for safe storage, including any incompatibilities

Recommendation for storage

Keep cool . Protect from sunlight.

Store in well-ventilated place.

Store locked up.

Store in well-ventilated place. Keep container tightly closed.

Store at temperatures not exceeding dignated temperature. Keep cool.

Storage temperature upper limit :2°C

Storage temperature lower limit :10°C

8. Exposure controls/personal protection

Control parameters e.g. occupational exposure limit values or biological limit values

Adopted value

ACGIH(1985) TWA: 0.005ppm (Resp sens)

OSHA-PEL

(4,4'-Methylenebis(phenyl isocyanate))

C 0.02ppm, 0.2mg/m³

NIOSH-REL

(4,4'-Methylenebis(phenyl isocyanate))

TWA 0.005ppm, 0.05mg/m³; C 0.02ppm, 0.2mg/m³

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Protective equipment

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Wear positive pressure self-contained breathing apparatus (SCBA).

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

Safety and Health measures

Wash ... thoroughly after handling.

Contaminated work clothing should not be allowed out of the workplace.

Take off contaminated clothing.

9. Physical and Chemical Properties

Physical properties

Appearance :CRYSTALS OR FLAKES

Color :WHITE TO PALE YELLOW

odour data N.A.

pH data N.A.

Phase change temperature

Initial Boiling Point/Boiling point :(100 kPa) 314°C (100KPa)

Melting point/Freezing point :37°C

Decomposition temperature data N.A.

Flash point :(C.C.) 196°C

Auto-ignition temperature :240°C

Vapor pressure :5.0X10⁻⁶ mm Hg(25°C) (25°C)

Relative Vapor Density (Air=1) :8.6

Specific gravity/Density :1.2

Solubility

Solubility in water :reaction

n-Octanol /water partition coefficient : log Pow5.22

10. Stability and Reactivity

Stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

The substance may polymerize under the influence of temperatures above 204°C. On combustion, forms toxic and corrosive fumes including nitrogen oxides and hydrogen cyanide.

Reacts readily with water. This produces insoluble polyureas.

Reacts violently with acids, alcohols, amines, bases and oxidants. This generates fire and explosion hazard.

Conditions to avoid

Contact with incompatible materials.

Open flames. Heat.

Incompatible materials

Acids, Bases, Oxidizing agents, Alcohols, Amines, Water.

Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Hydrogen cyanide.

11. Toxicological Information

Symptoms related to the physical, chemical and toxicological characteristics

Irritant properties

Skin corrosion/irritation

rabbit : irritating(IARC 19 (1979))

Serious eye damage /irritation

rabbit : irritating(IARC 19 (1979))

Allergenic and sensitizing effects

MAK/BAT(2004)-Sah

CICAD 27(2000)

No Teratogenic effects data available

Carcinogenic effects

IARC-Gr.3 ; Not Classifiable as a Human Carcinogen.

EU-Category3; Substances which cause concern for man owing to possible carcinogenic effects

EPA "Cannot Be Determined" to be carcinogenic(1996)

No Toxicity for reproduction data available

No Aspiration hazard data available

12. Ecological Information

Ecotoxicity

Water solubility

(4,4'-Methylenebis(phenyl isocyanate))

reaction (ICSC, 1999)

No Persistence and degradability data available

Bioaccumulative potential

log Pow=5.22(US EPA, 2011)

13. Disposal Considerations

Disposal methods

Dispose of contents/container in accordance with local/national regulation

14. Transport Information

UN No, UN CLASS

Not applicable to UN NO.

15. Regulatory Information

GHS classification and labelling

Acute Tox. 4 : H332 Harmful if inhaled

Skin Corr. 2 : H315 Causes skin irritation.

Eye Irrit. 2 : H319 Causes serious eye irritation

Resp. Sens. 1 : H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

Skin Sens. 1 : H317 May cause an allergic skin reaction

Carc. 2 : H351 Suspected of causing cancer

STOT SE 3 : H335 May cause respiratory irritation

STOT RE 2 : H373 May causes damage to organs through prolonged or repeated exposure.

US major regulations

TSCA

4,4'-Methylenebis(phenyl isocyanate)

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (4th ed., 2011), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 17th edit. UN

Classification, labelling and packaging of substances and mixtures (reg.(EC) No 1272/2008)

2012 EMERGENCY RESPONSE GUIDEBOOK(US DOT)

2013 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/monoeval/grlist.html>

Supplier's data/information

Chemical Risk Information Platform (CHRIP)(NITE) <http://www.safe.nite.go.jp/japan/db.html>

GHS Classification Guidance for Enterprises 2013 Revised Edition (August, 2013,METI)

Other information

This information contained in this data sheet represents the best information currently available to us. However, no warranty is made with respect to its completeness and we assume no liability resulting from its use. It are advised to make their own test

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on currentJapan official data, EU official data