

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 12/20/2007

Reviewed on 02/13/2007

1 Identification of substance:**Product details:****Product name:** Phenyl isocyanate**Stock number:**

A12808

L06169

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

Phenyl isocyanate (CAS# 103-71-9); 100%

Identification number(s):**EINECS Number:** 203-137-6**3 Hazards identification****Hazard description:**

Xn Harmful

Information pertaining to particular dangers for man and environment

R 10 Flammable.

R 22 Harmful if swallowed.

R 33 Danger of cumulative effects.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 40 Limited evidence of a carcinogenic effect.

R 42/43 May cause sensitization by inhalation and skin contact.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	4
FIRE	2
REACTIVITY	1

Health (acute effects) = 4

Flammability = 2

Reactivity = 1

4 First aid measures**After inhalation**

Supply fresh air and to be sure call for a doctor.

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

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Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

For safety reasons unsuitable extinguishing agents Water**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NOx)

Hydrogen cyanide (HCN)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away.

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Protect against electrostatic charges.
Fumes can combine with air to form an explosive mixture.

Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility:

Store away from water/moisture.

Protect from heat.

Do not store together with oxidizing and acidic materials.

Store away from strong bases.

Store away from alcohols.

Store away from amines.

Further information about storage conditions:

Refrigerate

Protect from humidity and water.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

Form:	Liquid
Color:	Colorless Light yellow
Odor:	Not determined

Change in condition

Melting point/Melting range:	-31.3°C (-24°F)
Boiling point/Boiling range:	162-163°C (324-325°F)
Sublimation temperature / start:	Not determined

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Flash point:	51°C (124°F)
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 20°C (68°F):	1.862 hPa (1 mm Hg)
Density at 20°C (68°F):	1.09 g/cm ³
Solubility in / Miscibility with Water:	Contact with water releases toxic gases
Alcohols:	Decomposes
Organic solvents:	Soluble in ether.

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Releases toxic gases when heated to decomposition.
Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Acids
Oxidizing agents
Bases
Water/moisture
Heat
Alcohols
Amines

Dangerous reactions

Decomposes with water, alcohol, or acid to produce very toxic cyanide and NO_x gases. Explosive when mixed with cobalt pentammine triazoperchlorate and nitrosyl perchlorate.

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide
Nitrogen oxides
Hydrogen cyanide (prussic acid)

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	196 mg/kg (mus) 800 mg/kg (rat)
Dermal	LD50	5 mL/kg (rat) 7130 mg/kg (rbt)
Inhalative	LC50/4H	22 mg/m ³ /4H (rat)

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Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization:

Sensitization possible through inhalation.

Sensitization possible through skin contact.

Other information (about experimental toxicology):

Mutagenic effects have been observed on tests with bacteria.

Subacute to chronic toxicity:

Isocyanates are extremely irritating to the skin, eyes and mucous membranes. Exposure may be fatal. Symptoms include burning sensation, coughing, wheezing, laryngitis, headache, nausea and vomiting.

Phenyl isocyanate causes somnolence, aggression, and dyspnea when vis skin absorption. When introduced internally through inhalation, ingestion, or injection, symptoms include cyanosis, acute pulmonary edema, tremors, and somnolence. Long term respiratory exposure may cause damage to blood cells such as changes in erythrocyte count, pigmented or nucleated red blood cells, structural or functional change in the trachea or bronchi, and death.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information**DOT regulations:****Hazard class:**

6.1

Identification number:

UN2487

Packing group:

I

Proper shipping name (technical name):

PHENYL ISOCYANATE

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Label 6.1+3**Land transport ADR/RID (cross-border)**

ADR/RID class: 6.1 (TF1) Toxic substances
Danger code (Kemler): 663
UN-Number: 2487
Packaging group: I
Description of goods: 2487 PHENYL ISOCYANATE

Maritime transport IMDG:

IMDG Class: 6.1
UN Number: 2487
Label 6.1+3
Packaging group: I
Proper shipping name: PHENYL ISOCYANATE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1
UN/ID Number: 2487
Label 6.1+3
Packaging group: I
Proper shipping name: PHENYL ISOCYANATE

15 Regulations**Product related hazard informations:****Hazard symbols:**

Xn Harmful

Risk phrases:

- 10 Flammable.
- 22 Harmful if swallowed.
- 33 Danger of cumulative effects.
- 36/37/38 Irritating to eyes, respiratory system and skin.
- 40 Limited evidence of a carcinogenic effect.
- 42/43 May cause sensitization by inhalation and skin contact.

Safety phrases:

- 23 Do not breathe gas/fumes/vapour/spray.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 36/37 Wear suitable protective clothing and gloves.

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- 43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
- 45 In case of accident or if you feel unwell, seek medical advice immediately.
- 60 This material and its container must be disposed of as hazardous waste.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Paul V. Connolly