

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 12/16/2009

Reviewed on 12/14/2009

1 Identification of substance:**Product details:****Product name:** 2,3,4,5,6-Pentafluorostyrene**Stock number:**

A16833

L02761

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#)**

2,3,4,5,6-Pentafluorostyrene (CAS# 653-34-9)

Identification number(s):**EINECS Number:** 211-500-5**3 Hazards identification****Hazard description:** Not applicable**Information pertaining to particular dangers for man and environment**

R 10 Flammable.

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

HEALTH	1
FIRE	3
REACTIVITY	1

Health (acute effects) = 1

Flammability = 3

Reactivity = 1

GHS label elements**Warning**

2.6/3 - Flammable liquid and vapour.

4 First aid measures**After inhalation**

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

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** CO2, sand, extinguishing powder. Do not 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

Hydrogen fluoride (HF)

Protective equipment:

Wear self-contained respirator.

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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).

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.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

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 oxidizing agents.

Store in the dark.

Protect from heat.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from exposure to light.

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.

Breathing equipment: Use suitable respirator when high concentrations are present.**Protection of hands:**

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Liquid
Color:	Colorless

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Odor:	Characteristic
Change in condition	
Melting point/Melting range:	Not determined
Boiling point/Boiling range:	139-140°C (282-284°F)
Sublimation temperature / start:	Not determined
Flash point:	34°C (93°F)
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	1.406 g/cm ³
Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix

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

Decomposition will not occur if used and stored according to specifications.

Danger of containers bursting upon heating.

Stable until: Depletion of inhibitor.**Materials to be avoided:**

Oxidizing agents

Ultraviolet radiation

Free radical initiators

Heat

Light

Dangerous reactions

Danger of polymerization

Spontaneous polymerization can be caused in unstabilized product e.g. by ambient heat

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Hydrogen fluoride

Additional information:

Unless inhibited, the product can polymerize resulting in a temperature and pressure increase that may rupture the container.

11 Toxicological information**Acute toxicity:****Primary irritant effect:****on the skin:** May cause irritation**on the eye:** May cause irritation**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:**

Other than potential irritation (see above), no information on illness or injury to humans from acute or chronic exposure to this product is available.

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 undiluted product or large quantities of it to reach ground water, water course or sewage system.

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.

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Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**14 Transport information****DOT regulations:**

Hazard class: 3
Identification number: UN1993
Packing group: III
Proper shipping name (technical name): FLAMMABLE LIQUID, N.O.S. (2,3,4,5,6-Pentafluorostyrene)
Label 3

Land transport ADR/RID (cross-border)

ADR/RID class: 3 (F1) Flammable liquids
Danger code (Kemler): 30
UN-Number: 1993
Packaging group: III
Description of goods: 1993 FLAMMABLE LIQUID, N.O.S. (2,3,4,5,6-Pentafluorostyrene)

Maritime transport IMDG:

IMDG Class: 3
UN Number: 1993
Label 3
Packaging group: III
Marine pollutant: No
Proper shipping name: FLAMMABLE LIQUID, N.O.S. (2,3,4,5,6-Pentafluorostyrene)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 3
UN/ID Number: 1993
Label 3
Packaging group: III
Proper shipping name: FLAMMABLE LIQUID, N.O.S. (2,3,4,5,6-Pentafluorostyrene)

UN "Model Regulation": UN1993, FLAMMABLE LIQUID, N.O.S., 3, III**15 Regulations****Product related hazard informations:****Risk phrases:**

10 Flammable.

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National regulations

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

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: Zachariah Holt

Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

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