

**Safety Data Sheet**

acc. to OSHA HCS

Printing date 01/22/2014

Reviewed on 10/01/2012

**1 Identification****Product identifier****Product name:** Fluorene**Stock number:** L02124**CAS Number:**

86-73-7

**EC number:**

201-695-5

**Relevant identified uses of the substance or mixture and uses advised against.****Identified use:** SU24 Scientific research and development**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

**Information Department:** Health, Safety and Environmental Department**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department at (800) 343-0660. After normal hours call Carechem 24 at (866) 928-0789.

**2 Hazard(s) identification****Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

The substance is not classified as hazardous to health or the environment according to the CLP regulation.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

N; Dangerous for the environment

R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Information concerning particular hazards for human and environment:** Not applicable**Hazards not otherwise classified** No information known.**Label elements****Labelling according to Regulation (EC) No 1272/2008** Not applicable**Hazard pictograms** Not applicable**Signal word** Not applicable**Hazard statements** Not applicable**WHMIS classification** Not controlled**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	1
REACTIVITY	1

Health (acute effects) = 1

Flammability = 1

Physical Hazard = 1

**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**3 Composition/information on ingredients****Chemical characterization:** Substances**CAS# Description:**

86-73-7 Fluorene

**Identification number(s):****EC number:** 201-695-5**4 First-aid measures****Description of first aid measures****After inhalation**

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

Seek immediate medical advice.

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**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 medical treatment.

**Information for doctor**

**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

**5 Fire-fighting measures****Extinguishing media****Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

**Special hazards arising from the substance or mixture**

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

**Advice for firefighters****Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

**Environmental precautions:**

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

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

Do not allow to penetrate the ground/soil.

**Methods and material for containment and cleaning up:** Pick up mechanically.

**Prevention of secondary hazards:** No special measures required.

**Reference to other sections**

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****Precautions for safe handling**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:** No information known.

**Conditions for safe storage, including any incompatibilities****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.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

**Specific end use(s)** No further relevant information available.

**8 Exposure controls/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.

**Control parameters****Components with limit values that require monitoring at the workplace:**

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

**Additional information:** No data

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**Exposure controls****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.

Maintain an ergonomically appropriate working environment.

**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.

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****Information on basic physical and chemical properties****General Information****Appearance:**

Form:	Powder
Color:	White
Odor:	Not determined
Odor threshold:	Not determined.

pH-value:	Not applicable.
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**Change in condition**

Melting point/Melting range:	113-117 °C (235-243 °F)
Boiling point/Boiling range:	295 °C (563 °F)
Sublimation temperature / start:	Not determined

Flash point:	151 °C (304 °F)
Flammability (solid, gaseous)	Not determined.
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Not determined.

Danger of explosion:	Not determined.
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**Explosion limits:**

Lower:	Not determined
Upper:	Not determined

Vapor pressure:	Not applicable.
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Density at 20 °C (68 °F):	1.202 g/cm <sup>3</sup> (10.031 lbs/gal)
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Relative density	Not determined.
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Vapor density	Not applicable.
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Evaporation rate	Not applicable.
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**Solubility in / Miscibility with**

Water:	Insoluble
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Partition coefficient (n-octanol/water):	Not determined.
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**Viscosity:**

dynamic:	Not applicable.
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kinematic:	Not applicable.
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Other information	No further relevant information available.
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**10 Stability and reactivity****Reactivity** No information known.**Chemical stability** Stable under recommended storage conditions.**Thermal decomposition / conditions to be avoided:**

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

**Possibility of hazardous reactions** Reacts with strong oxidizing agents**Incompatible materials:** Oxidizing agents**Hazardous decomposition products:** Carbon monoxide and carbon dioxide**11 Toxicological information****Information on toxicological effects****Acute toxicity:** No effects known.

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**LD/LC50 values that are relevant for classification:** No data**Skin irritation or corrosion:** May cause irritation**Eye irritation or corrosion:** May cause irritation**Sensitization:** No sensitizing effects known.**Germ cell mutagenicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

**Carcinogenicity:**

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

IARC-3: Not classifiable as to carcinogenicity to humans.

**Reproductive toxicity:** No effects known.**Specific target organ system toxicity - repeated exposure:** No effects known.**Specific target organ system toxicity - single exposure:** No effects known.**Aspiration hazard:** No effects known.**Additional toxicological information:**

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

**12 Ecological information****Toxicity****Aquatic toxicity:** No further relevant information available.**Persistence and degradability** No further relevant information available.**Behavior in environmental systems:****Bioaccumulative potential** No further relevant information available.**Mobility in soil** No further relevant information available.**Ecotoxicological effects:****Remark:** Very toxic for aquatic organisms**Additional ecological information:****General notes:**

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

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

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

Also poisonous for fish and plankton in water bodies.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

Very toxic for aquatic organisms

**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects** No further relevant information available.**13 Disposal considerations****Waste treatment methods****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****UN-Number****DOT, ADR, IMDG, IATA**

UN3077

**UN proper shipping name****DOT**Environmentally hazardous substances, solid,  
n.o.s. (Fluorene)**ADR**3077 Environmentally hazardous substances, solid,  
n.o.s. (Fluorene)**IMDG, IATA**ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S. (Fluorene)

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**Transport hazard class(es)**

DOT, IMDG



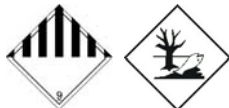
Class

9 Miscellaneous dangerous substances and articles.

Label

9

ADR



Class

9 (M7) Miscellaneous dangerous substances and articles

Label

9

IATA



Class

9 Miscellaneous dangerous substances and articles.

Label

9

**Packing group**

DOT, ADR, IMDG, IATA

III

**Environmental hazards:**

Special marking (ADR):

Symbol (fish and tree)

Special marking (IATA):

Symbol (fish and tree)

Special precautions for user

Warning: Miscellaneous dangerous substances and articles

Danger code (Kemler):

90

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

**Transport/Additional information:**

DOT

Marine Pollutant (DOT):

No

UN "Model Regulation":

UN3077, Environmentally hazardous substances, solid, n.o.s. (Fluorene), 9, III

**15 Regulatory information**

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**National regulations**

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

All components of this product are listed on the Canadian Domestic Substances List (DSL).

SARA Section 313 (specific toxic chemical listings) Substance is not listed.

**California Proposition 65**

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not listed.

**Information about limitation of use:**

For use only by technically qualified individuals.

This product is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

**Other regulations, limitations and prohibitive regulations**

Substances of very high concern (SVHC) according to REACH, Article 57

Substance is not listed.

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**REACH - Pre-registered substances** Substance is listed.**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.**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 SDS:** Health, Safety and Environmental Department.**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)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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