

## SAFETY DATA SHEET

Creation Date 09-Feb-2016

Revision Date 15-Mar-2018

Revision Number 1

### 1. Identification

**Product Name** Fluorene  
**Cat No. :** L02124  
**CAS-No** 86-73-7  
**Synonyms** Diphenylenemethane  
**Recommended Use** Laboratory chemicals.  
**Uses advised against** Not for food, drug, pesticide or biocidal product use

#### Details of the supplier of the safety data sheet

##### Company

Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
**Email:** tech@alfa.com  
www.alfa.com

##### **Emergency Telephone Number**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660.  
After normal business hours, call Carechem 24 at (866) 928-0789.

### 2. Hazard(s) identification

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Combustible dust	Yes
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#### Label Elements

##### **Signal Word**

Warning

##### **Hazard Statements**

May form combustible dust concentrations in air

##### **Precautionary Statements**

###### **Storage**

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

###### **Hazards not otherwise classified (HNOC)**

Very toxic to aquatic life with long lasting effects

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Fluorene	86-73-7	>95

### 4. First-aid measures

<b>General Advice</b>	If symptoms persist, call a physician.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
<b>Inhalation</b>	Move to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
<b>Ingestion</b>	Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.
<b>Most important symptoms and effects</b>	None reasonably foreseeable.
<b>Notes to Physician</b>	Treat symptomatically

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	151 °C / 303.8 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	Not applicable
<b>Explosion Limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

#### Specific Hazards Arising from the Chemical

Do not allow run-off from fire fighting to enter drains or water courses.

#### Hazardous Combustion Products

None known

#### Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

#### NFPA

Health  
0

Flammability  
1

Instability  
0

Physical hazards  
N/A

### 6. Accidental release measures

<b>Personal Precautions</b>	Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.
<b>Environmental Precautions</b>	Do not flush into surface water or sanitary sewer system. Do not allow material to

contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

**Methods for Containment and Clean Up** Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

## 7. Handling and storage

**Handling** Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

**Storage** Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

## 8. Exposure controls / personal protection

**Exposure Guidelines** This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

**Engineering Measures** Ensure adequate ventilation, especially in confined areas.

### Personal Protective Equipment

**Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

**Skin and body protection** Long sleeved clothing.

**Respiratory Protection** No protective equipment is needed under normal use conditions.

**Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

## 9. Physical and chemical properties

<b>Physical State</b>	Powder Solid
<b>Appearance</b>	Beige
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	112 - 116 °C / 233.6 - 240.8 °F
<b>Boiling Point/Range</b>	298 °C / 568.4 °F @ 760 mmHg
<b>Flash Point</b>	151 °C / 303.8 °F
<b>Evaporation Rate</b>	Not applicable
<b>Flammability (solid,gas)</b>	No information available
<b>Flammability or explosive limits</b>	
<b>Upper</b>	No data available
<b>Lower</b>	No data available
<b>Vapor Pressure</b>	13 hPa @ 146 °C
<b>Vapor Density</b>	Not applicable
<b>Specific Gravity</b>	1.200
<b>Solubility</b>	Insoluble in water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	Not applicable
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	Not applicable
<b>Molecular Formula</b>	C13 H10
<b>Molecular Weight</b>	166.22

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products.
<b>Incompatible Materials</b>	Strong oxidizing agents
<b>Hazardous Decomposition Products</b>	None under normal use conditions
<b>Hazardous Polymerization</b>	No information available.
<b>Hazardous Reactions</b>	None under normal processing.

## 11. Toxicological information

### Acute Toxicity

**Product Information** No acute toxicity information is available for this product

### **Component Information**

**Toxicologically Synergistic** No information available

### **Products**

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Irritation** No information available

**Sensitization** No information available

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Fluorene	86-73-7	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** No information available

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** No information available

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

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

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Fluorene	EC50 = 3.4 mg/L/96h	LC50 = 0.82 mg/L/96h	Not listed	Not listed

<b>Persistence and Degradability</b>	May persist
<b>Bioaccumulation/ Accumulation</b>	No information available.
<b>Mobility</b>	. Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Fluorene	4.18

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

### 14. Transport information

#### DOT

<b>UN-No</b>	UN3077
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
<b>Proper technical name</b>	Fluorene
<b>Hazard Class</b>	9
<b>Packing Group</b>	III

#### TDG

<b>UN-No</b>	UN3077
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
<b>Hazard Class</b>	9
<b>Packing Group</b>	III

#### IATA

<b>UN-No</b>	UN3077
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
<b>Hazard Class</b>	9
<b>Packing Group</b>	III

#### IMDG/IMO

<b>UN-No</b>	UN3077
<b>Proper Shipping Name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
<b>Hazard Class</b>	9
<b>Packing Group</b>	III

### 15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

#### International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Fluorene	X	X	-	201-695-5	-		X	X	X	X	-

#### Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

TSCA 12(b) Not applicable

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Fluorene	86-73-7	>95	0.1

SARA 311/312 Hazard Categories See section 2 for more information

**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Fluorene	-	-	-	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration  
Not applicable

**CERCLA** This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Fluorene	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Fluorene	X	X	X	-	-

**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
 DOT Marine Pollutant N  
 DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**  
 This product does not contain any DHS chemicals.

**Other International Regulations**

Mexico - Grade No information available

## 16. Other information

**Prepared By** Health, Safety and Environmental Department  
 Email: tech@alfa.com  
 www.alfa.com

**Creation Date** 09-Feb-2016  
**Revision Date** 15-Mar-2018  
**Print Date** 15-Mar-2018  
**Revision Summary** SDS authoring systems update, replaces ChemGes SDS No. 86-73-7/3.

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage,

transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of SDS**