



## MATERIAL SAFETY DATA SHEET

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### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MSDS Name:** 9-Fluorenylmethyl chloroformate, 98%

**Catalog Numbers:**

17094-0000, 17094-0010, 17094-0050, 17094-0250, 17094-0500

**Synonyms:**

9-Fluorenylmethyloxycarbonylchloride; FMOC-chloride

**Company Identification (Europe):**

LEONID CHEMICALS  
62/A-2 2nd Stage, Industrial Suburb  
Yeshwanthpur, Bangalore -22, INDIA  
Ph- +91-80-23378354

### SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS

CAS #	: 28920-43-6
Chemical Name	: 9-Fluorenylmethyl chloroformate
%	: 98%
EINECS#	: 249-313-6
Hazard Symbols	: C
Risk Phrases	: 20/21/22 34

### SECTION 3 - HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**

Harmful by inhalation, in contact with skin and if swallowed. Causes burns. Moisture sensitive.

**Potential Health Effects**

**Eye:**

Causes eye burns. Lachrymator (substance which increases the flow of tears).

**Skin:**

Harmful if absorbed through the skin. Causes skin burns.

**Ingestion:**

Harmful if swallowed. Causes gastrointestinal tract burns.

**Inhalation:**

Harmful if inhaled. Causes chemical burns to the respiratory tract.



**Chronic:**  
Not available.

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#### SECTION 4 - FIRST AID MEASURES

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**Eyes:**

Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

**Skin:**

Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

**Ingestion:**

Do not induce vomiting. Get medical aid immediately.

**Inhalation:**

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Notes to Physician:**

Treat symptomatically and supportively.

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#### SECTION 5 - FIRE FIGHTING MEASURES

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**General Information:**

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

**Extinguishing Media:**

Use foam, dry chemical, or carbon dioxide. Use water spray, dry chemical, carbon dioxide, or chemical foam. DO NOT USE WATER!

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#### \*\*\*\* SECTION 6 - ACCIDENTAL RELEASE MEASURES \*\*\*\*

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**General Information:**

Use proper personal protective equipment as indicated in Section 8.

**Spills/Leaks:**

Vacuum or sweep up material and place into a suitable disposal container.

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#### SECTION 7 - HANDLING AND STORAGE

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**Handling:**

Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Use only in a chemical fume hood.

**Storage:**

Store in a tightly closed container. Store in a dry area. Keep refrigerated. (Store below 4°C/39°F.)

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**SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

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**Engineering Controls:**

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

**Personal Protective Equipment****Eyes:**

Wear chemical goggles.

**Skin:**

Wear appropriate protective gloves to prevent skin exposure.

**Clothing:**

Wear appropriate protective clothing to prevent skin exposure.

**Respirators:**

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

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**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

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Physical State	: Crystalline powder
Color	: white - very slightly yellow
Odor	: Not available.
PH	: Not available.
Vapor Pressure	: Not available.
Viscosity	: Not available.
Boiling Point	: Not available.
Freezing/Melting Point	: 63 deg C
Autoignition Temperature	: Not available.
Flash Point	: Not available.
Explosion Limits, lower	: Not available.
Explosion Limits, upper	: Not available.
Decomposition Temperature	NA
Solubility in water	:decomposes in water
Specific Gravity/Density	NA
Molecular Formula	C15H11ClO2
Molecular Weight	258.69

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**SECTION 10 - STABILITY AND REACTIVITY**

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**Chemical Stability:**

Stable under normal temperatures and pressures.

**Conditions to Avoid:**

Incompatible materials, exposure to moist air or water.

**Incompatibilities with Other Materials:**

Strong oxidizing agents, acids, strong bases, alcohols, amines.

**Hazardous Decomposition Products:**

Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide.

**Hazardous Polymerization:**

Has not been reported

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**SECTION 11 - TOXICOLOGICAL INFORMATION**

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**RTECS#:**

CAS# 28920-43-6: LQ6250000

**LD50/LC50:**

Not available.

**Carcinogenicity:**

9-Fluorenylmethyl chloroformate -

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

See actual entry in RTECS for complete information.

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**SECTION 12 - ECOLOGICAL INFORMATION**

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**Ecotoxicity:**

log Pow 3,45

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**SECTION 13 - DISPOSAL CONSIDERATIONS**

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Dispose of in a manner consistent with federal, state, and local regulations.

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**SECTION 14 - TRANSPORT INFORMATION**

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**IATA**

Shipping Name: TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.\*

Hazard Class: 6.1

UN Number: 2928

Packing Group: II

**IMO**

Shipping Name: TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.

Hazard Class: 6.1

UN Number: 2928

Packing Group: II

**RID/ADR**

Shipping Name: TOXIC SOLID, CORROSIVE, ORGANIC, N.O.S.

Hazard Class: 6.1

UN Number: 2928

Packing group: II

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**SECTION 15 - REGULATORY INFORMATION**

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**European/International Regulations****European Labeling in Accordance with EC Directives**

**Hazard Symbols:** C

**Risk Phrases:**

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

**Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 28920-43-6: No information available.

**United Kingdom Occupational Exposure Limits****United Kingdom Maximum Exposure Limits****Canada**

CAS# 28920-43-6 is listed on Canada's DSL List.

CAS# 28920-43-6 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

**US FEDERAL**

TSCA

CAS# 28920-43-6 is not listed on the TSCA inventory.

It is for research and development use only.

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**SECTION 16 - ADDITIONAL INFORMATION**

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MSDS Creation Date: 7/16/1996 Revision #1 Date: 6/19/2003

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.



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