

Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
	POSSIBLE CARCINOGEN. MINIMIZE EXPOSURE.	   

Section I. Chemical Product and Company Identification

Chemical Name	9-Fluorenone		
Catalog Number	F0021	Supplier	TGI America 9211 N. Harborgate St. Portland OR 1-800-423-8616
Synonym	9H-Fluoren-9-one		
Chemical Formula	C ₁₃ H ₈ O		
CAS Number	486-25-9	In case of Emergency Call	Chemtrec® (800) 424-9300 (U.S.) (703) 527-3887 (International)

Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
9-Fluorenone	486-25-9	Min. 98.0 (GC)	Not available.	Mouse LD ₅₀ (intraperitoneal) >2gm/kg

Section III. Hazards Identification

Acute Health Effects	No specific information is available in our data base regarding the toxic effects of this material for humans. However, exposure to any chemical should be kept to a minimum. Skin and eye contact may result in irritation. May be harmful if inhaled or ingested. Always follow safe industrial hygiene practices and wear proper protective equipment when handling this compound. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.
Chronic Health Effects	<p>CARCINOGENIC EFFECTS : Possible carcinogen - minimize exposure.</p> <p>MUTAGENIC EFFECTS : Not available.</p> <p>TERATOGENIC EFFECTS : Tumorigenic Effects: Rat TDLo (Subcutaneous), 300 mg/kg/26 weeks, intermittent. Toxic Effects: Tumorigenic - Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages - Tumors.</p> <p>DEVELOPMENTAL TOXICITY Not available. Repeated or prolonged exposure to this compound is not known to aggravate existing medical conditions.</p>

Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

Section V. Fire and Explosion Data

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	Not available.	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO ₂).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions			

Continued on Next Page

Emergency phone number (800) 424-9300

SMALL FIRE: Use DRY chemical powder.
 LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.
 Consult with local fire authorities before attempting large scale fire-fighting operations.

Section VI. Accidental Release Measures

Spill Cleanup Instructions Possible carcinogenic material. Use a shovel to put the material into a convenient waste disposal container. Finish cleaning the spill by rinsing any contaminated surfaces with copious amounts of water. Consult federal, state, and/or local authorities for assistance on disposal.

Section VII. Handling and Storage

Handling and Storage Information POSSIBLE CARCINOGEN. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. Do not breathe dust. Always store away from incompatible compounds such as oxidizing agents.

Section VIII. Exposure Controls/Personal Protection

Engineering Controls Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection Splash goggles. Lab coat. Dust respirator. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product. Be sure to use a MSHA/NIOSH approved respirator or equivalent.



Exposure Limits Not available.

Section IX. Physical and Chemical Properties

Physical state @ 20°C	Solid. (Yellow chips.)	Solubility	Insoluble in water. Soluble in alcohol, acetone, benzene.
Specific Gravity	$d_{4}^{20} 1.1300$		Very soluble in ether, toluene, hot benzene. Soluble in oxygenated and aromatic solvents.
Molecular Weight	180.20	Partition Coefficient	Not available.
Boiling Point	342°C (647.6°F)	Vapor Pressure	Not applicable.
Melting Point	82 to 85°C (179.6 to 185°F)	Vapor Density	Not available.
Refractive Index	1.6369 @ 99°C	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

Section X. Stability and Reactivity Data

Stability This material is stable if stored under proper conditions. (See Section VII for instructions)

Conditions of Instability Avoid excessive heat and light.

Incompatibilities Reactive with strong oxidizing agents.

Section XI. Toxicological Information

RTECS Number LL8925000

Routes of Exposure Eye Contact. Ingestion. inhalation.

Toxicity Data Mouse LD₅₀ (intraperitoneal) >2gm/kg

Chronic Toxic Effects **CARCINOGENIC EFFECTS** : Possible carcinogen - minimize exposure.
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TERATOGENIC EFFECTS : Tumorigenic Effects:
 Rat TDLo (Subcutaneous), 300 mg/kg/26 weeks, Intermittent.
 Toxic Effects:
 Tumorigenic - Equivocal tumorigenic agent by RTECS criteria.
 Skin and Appendages - Tumors.
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Acute Toxic Effects No specific information is available in our data base regarding the toxic effects of this material for humans. However, exposure to any chemical should be kept to a minimum. Skin and eye contact may result in irritation. May be harmful if inhaled or ingested. Always follow safe industrial hygiene practices and wear proper protective equipment when handling this compound. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

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Section XII. Ecological Information

Ecotoxicity Not available.

Environmental Fate Fluorenone's production and use as an intermediate or reagent may result in its release to the environment through various waste streams. Fluorenone is also found in fly ash from municipal incinerators, and in wood smoke and fossil fuel combustion products. If released to the atmosphere, fluorenone will exist in both the vapor and particulate phases in the ambient atmosphere based on an estimated vapor pressure of 5.7×10^{-5} mm Hg at 25 deg C. Vapor-phase fluorenone is degraded in the atmosphere by reaction with photochemically produced hydroxyl radicals with an estimated half-life of about 3 days. An estimated Koc of 2300 suggests that fluorenone will have only slight mobility in soil. Volatilization from dry and moist soil surfaces should not be a major fate process for this compound. Based on limited data, this compound may biodegrade in both soil and water. Groundwater, taken from a gasoline contaminated aquifer, was used to inoculate samples containing fluorenone as the sole carbon source; complete degradation was observed by day 11-15. In water, fluorenone is expected to adsorb to sediment and suspended matter based on its Koc value. Fluorenone may volatilize slowly from water surfaces given an estimated Henry's Law constant of 6.8×10^{-7} atm-cu m/mole. Estimated half-lives for a model river and model lake are 73 and 530 days, respectively. Bioconcentration in aquatic organisms may occur based on an estimated BCF value of 310; fluorenone has been detected in samples of catfish and snails. The general population may be exposed to this compound by ingestion of contaminated drinking water and inhalation of aerosols containing fluorenone.

Section XIII. Disposal Considerations

Waste Disposal Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.

Section XIV. Transport Information

DOT Classification Not a DOT controlled material (United States).

PIN Number Not applicable.

Proper Shipping Name Not applicable.

Packing Group (PG) Not applicable.

DOT Pictograms

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA) This compound is **ON** the EPA Toxic Substances Control Act (TSCA) inventory list.

WHMIS Classification (Canada) Not available.

EINECS Number (EEC) 207-630-7

EEC Risk Statements R45- May cause cancer.

Japanese Regulatory Data Not available.

Section XVI. Other Information

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Validated on 10/1/2002.
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Notice to Reader

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.