
SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product/Catalog Number(s):

60-111A150

2 mg/mL; 150 µL/vial

Product name: 2-nitrofluorene**Synonyms:** 2-nitro-9h-fluorene, 2-Nitro-9H-fluorene, 9H-Fluorene, 2-nitrofluorene**Manufacturer:** Molecular Toxicology Inc.**Address:** 157 Industrial Park Drive,
Boone, North Carolina, 28607**Phone:** (1) 828 264 9099 (8:30 – 17:00 EST)**Fax:** 828 264 0103**Emergency contact (Chemtrec):** Contact 1800-424-9300 (USA) or 703 527 3887 (International)
at other timesEmail: chemtrec@chemtrec.com; <http://www.chemtrec.com/>**Recommended use:** Laboratory, For Research Only**Restrictions on use:** Not for clinical use

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture per GSH and EU Directive 1272/2008**Warning****Physical hazards**

None known

Health hazards

Carcinogenicity (Category 2)

Chronic aquatic toxicity (Category 2)

Flammable liquid (Cat 4)

Environmental hazards

See eco-toxicity section 12.

Labelling**Hazard Statements**

H227 Combustible liquid

H351 Suspected of causing cancer

H411 Toxic to aquatic life with long-lasting effects

Precautionary Statements

P201 Receive special instructions before use

P202 Do not handle until all safety precautions are understood

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P273 Avoid release into the environment

P280 Wear protective gloves/eye protection/face protection.

P308+313 IF exposed or concerned: Get medical advice/attention

P370 + P378 In case of fire: use dry sand, dry chemical or alcohol-resistant

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foam to extinguish.

P403+ 235 Store in a well-ventilated place. Keep cool.

P405 Store locked up

P391 Collect spillage

P501 Dispose of contents/container in accordance with local/regional/national/international regulations

Other hazards

HMIS Classification

Health hazard: 0

Flammability: 2

Physical hazards: 0

NFPA Rating

Health hazard: 0

Fire: 2

Reactivity Hazard: 0

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture/Hazardous Components

Component	Purpose	CAS-No	EC-No.	Weight %
2-Nitrofluorene C ₁₃ H ₉ NO ₂	Biochemical used in the study of carcinogenesis	607-57-8	210-138-5	0.2%
Dimethylsulfoxide	Organic solvent	67-68-5	200-664-3	99.8%

SECTION 4. FIRST AID MEASURES

Description of first aid measures

Eye Contact Rinse eyes and under eyelids immediately with plenty of water. Consult a doctor.

Skin Contact Wash off immediately with plenty of soap and water and rinse thoroughly. Seek immediate medical advice.

Ingestion Do NOT induce vomiting. Rinse mouth with plenty of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

Inhalation Move to fresh air. If required, provide artificial respiration. Keep patient warm. Consult a physician.

Protection of first-aiders Not required

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. In the event that symptoms develop or persists, obtain medical attention.

Most important symptoms and effects, both acute and delayed

Acute: Ingestion - May be harmful if swallowed; Skin - May be harmful in contact with skin; Eyes - May cause irritation.

Chronic: May be carcinogenic - duration and level of exposure dependent

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Indication of any immediate medical attention and special treatment needed

Seek medical attention if ingested or if breathing difficulties are observed.

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special hazards arising from the substance or mixture

Hazardous thermal decomposition products: Carbon dioxide, carbon monoxide, nitrogen oxides, Sulphur oxides.

Advice for firefighters

Fire-fighters should wear fully protective impervious protective equipment and self-contained breathing apparatus (SCBA).

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate surrounding areas. Use personal protective equipment.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not release material into drains.

Methods and material for containment and cleaning up

Contain spillage, and then collect by wet-brushing and place in container for disposal according to local regulations (see Section 13). Keep in suitable, closed containers for disposal.

Reference to other sections

Refer to Sections 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of aerosols. Do not breathe spray or mist.

Provide appropriate exhaust ventilation.

Keep away from sources of ignition – No smoking. Take measures to prevent the buildup of electrostatic charge. For precautions see Section 2.

Conditions for safe storage, including any incompatibilities

Storage - Store according to product packaging, tightly sealed. Keep in a dry, well-ventilated place. Light sensitive. Hygroscopic.

Specific end use(s)

Apart from the uses mentioned in Section 3 no other specific uses are stipulated.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Control parameters****Components with workplace control parameters**

Component	CAS-No.	Value	Control Parameters	Basis
Dimethyl sulfoxide	67-68-5	TWA	250.000000 ppm	USA. Workplace Environmental Exposure Levels (WEEL)

Exposure controls**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimize release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source. Use of a properly operating chemical fume hood designed for hazardous chemicals is recommended.

Personal protective equipment

Eye Protection: Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Hand Protection

Chemical resistant gloves; nitrile rubber recommended. Inspect gloves before use. Use proper glove removal technique (without touching glove's out surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 38 min

Material tested: Dermatrill® P (KCL) 743 / Aldrich Z677388, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used under conditions which differ from EM 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering and approval for any specific use scenario.

Skin and body protection

Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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Respiratory Protection

Exposure risk assessment must be performed by a qualified Industrial Hygienist. Where risk assessment shows air purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. NIOSH approved Respiratory Protection is required by EPA. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hygiene Measures - Handle in accordance with good industrial hygiene and safety practice. Wash hands, forearms and face thoroughly after handling chemical products, before smoking, eating and using lavatory, and at the end of the work period. Employ techniques to avoid contamination of clothing. Keep away from food, beverages, and feed.

Environmental exposure controls – Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Exposure limits

Permissible Exposure Limits and Threshold Limit Values not specified by OSHA.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Liquid, light yellow
Auto-ignition temperature	300 – 302°C
Boiling point	189°C (372°C)
Decomposition temperature	> 190°C
Upper/lower flammability or explosive limits	Upper explosion Limit: 42% (V) Lower explosion limit: 3.5% (V)
Flash point	87°C – closed cup – ASTM D 93
Formula	N/A
Melting point/range	16 – 19°C
Molecular weight	N/A
Odor threshold	no data available
Osmolality	no data available
Partition Coefficient	no data available
pH	no data available
Solubility in water	no
Specific gravity	no data available
Vapor density	2.70 - (Air = 1.0)
Vapor pressure	0.55 hPa (0.41 mmHg) at 20°C 4hPa (3 mmHg) at 50°C
Viscosity	no data available

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Other information

SECTION 10. STABILITY AND REACTIVITY

Reactivity

Not reactive.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

No hazardous reactions known.

Conditions to avoid

Strong bases. Heat, flames and sparks. Exposure to light.

Incompatible materials

Strong bases, strong oxidizing agents, strong acids, acid chlorides, phosphorus halides, strong reduction agents.

Hazardous decomposition products

Carbon monoxide and carbon dioxide, Nitrogen oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity

Acute toxicity
No data available
Skin corrosion/irritation
Mild skin irritation
Serious eye damage/eye irritation
No data available
Respiratory or skin sensitization
No data available
Germ cell mutagenicity
No data available
Carcinogenicity
No data available
Reproductive toxicity
No data available
Specific target organ toxicity - single exposure
No data available
Specific target organ toxicity - repeated exposure

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No data available
Aspiration hazard
No data available
Additional Information
RTECS: PV6210000

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic ecotoxicity:

Toxic to aquatic life with long lasting effects.

Persistence and degradability: No data available.

Behavior in environment systems:

Bioaccumulative potential: No data available.

Mobility in soil: No data available.

Additional 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.

Results of PBT and vPVB Assessment

PBT: Not applicable

vPvB: Not applicable

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13. DISPOSAL CONSIDERATIONS

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging

Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

Not a hazardous material for transportation

DOT (US) regulations:

Hazard class: None

IMDG

UN number: 3077

Class: 9

Packing group: III

EMS-No: F-A, S-F

Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2-Nitrofluorene)

Marine pollutant: Marine pollutant

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IATA

UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (2-Nitrofluorene)

Further information

When sold in quantities of less than or equal to 1 ml, or 1g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore, packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards

Carcinogen

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

2-Nitrofluorene	CAS-No. 607-57-8	
Dimethyl sulfoxide	CAS-No. 67-68-5	Revision Date 2007-03-01

New Jersey Right To Know Components

2-Nitrofluorene	CAS-No. 607-57-8	
Dimethyl sulfoxide	CAS-No. 67-68-5	Revision Date 2007-03-01

California Prop. 65 Components

Warning! This product contains a chemical known to State of California to cause cancer, birth defects, and other reproductive harms.

SECTION 16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Molecular Toxicology, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. See www.moltox.com and/or the invoice or packing slip for additional terms and conditions of sale.