MATERIAL SAFETY DATA SHEET

Positive Controls for AMES MPF™ Mutagenicity Kits

1. NOTE

Positive Controls contain mutagenic chemicals in small quantities. Handle in accordance with NIH guidelines for the safe handling of chemical carcinogens. Wear approved gloves. Do not mouth pipette. Dispose of waste in accordance with your institutional requirements.

The following pages contain the MSDS provided by the producer of the positive control chemicals.

2. ORDER NUMBER AND CONTENTS

Order Number	Chemical	CAS#	Amount per vial
PPC-NF00	2-Nitrofluorene	607-57-8	20 µg

The same positive control chemical can also be part of a complete AMES MPF™ mutagenicity assay kit which is sold under a different Order Number.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006
Version 3.0 Revision Date 24.08.2008
Print Date 08.02.2010
GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name	:	2-Nitrofluorene
Product Number	:	N16754
Brand	:	Aldrich
Company	:	Sigma-Aldrich GmbH Industriestrasse 25 CH-9471 BUCHS
Telephone	:	+41817552511
Fax	:	+41817565449
Emergency Phone #	:	+41 81-755-2255 145(CH) +41 44-251-5151 (Tox-Zentrum)
E-mail address	:	eurtechserv@sial.com

2. HAZARDS IDENTIFICATION

Risk advice to man and the environment
Limited evidence of a carcinogenic effect. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula	:	C13H9NO2
Molecular Weight	:	211,22 g/mol

CAS-No.	EC-No.	Index-No.	Classification	Concentration
2-Nitrofluorene				
607-57-8	210-138-5	-	Xn, N, R40 - R51/53	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

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

Light sensitive.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	solid
Colour	light yellow

Safety data

pH	no data available
Melting point	156 - 158 °C
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 3,83

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong bases

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Intraperitoneal - mouse - 1.600 mg/kg

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

Carcinogenicity - rat - Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

Carcinogenicity - rat - Skin
Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Endocrine:Tumors.

IARC: Group 2B - Possibly carcinogenic to humans (2-Nitrofluorene)

Genotoxicity in vitro - rat - Liver
Unscheduled DNA synthesis

Genotoxicity in vitro - rat - S. typhimurium
Host-mediated assay

Genotoxicity in vitro - mouse - lymphocyte
DNA damage

Genotoxicity in vitro - mouse - Liver
Unscheduled DNA synthesis

Genotoxicity in vitro - mouse - fibroblast
Micronucleus test

Genotoxicity in vitro - mouse - lymphocyte
Mutation in mammalian somatic cells.

Genotoxicity in vitro - Hamster - Lungs
Cytogenetic analysis

Genotoxicity in vitro - Hamster - Embryo
Morphological transformation.

Genotoxicity in vitro - Hamster - ovary
Sister chromatid exchange

Genotoxicity in vitro - Ames test - positive

Genotoxicity in vitro - Human - HeLa cell
DNA inhibition

Genotoxicity in vivo - rat - Oral
DNA damage

Genotoxicity in vivo - rat - Oral
Unscheduled DNA synthesis

Genotoxicity in vivo - Hamster - Oral
Sister chromatid exchange

Genotoxicity in vivo - rat - Intraperitoneal
Morphological transformation.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

Additional Information
RTECS: LL8225000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Further information on ecology

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

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. 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.

14. TRANSPORT INFORMATION

ADR/RID
UN-Number: 3077 Class: 9 Packing group: III
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (2-Nitrofluorene)

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: No

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

15. REGULATORY INFORMATION

Labelling according to EC Directives

Hazard symbols

Xn	Harmful
N	Dangerous for the environment

R-phrase(s)

R40	Limited evidence of a carcinogenic effect.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S36/37	Wear suitable protective clothing and gloves.
S61	Avoid release to the environment. Refer to special instructions/ Safety data sheets.

16. OTHER INFORMATION

Further 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 and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.