

# • SAFETY DATA SHEET

Version 6.10  
Revision Date 11/06/2025  
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## SECTION 1. IDENTIFICATION

### 1.1 Product identifiers

Product name : 4-Fluoroaniline

Product Number : F3800  
Brand : Aldrich  
CAS-No. : 371-40-4

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

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

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

### 1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)**

**Hazards for the product as supplied**

Flammable liquids : Category 4

|                                                    |                                            |
|----------------------------------------------------|--------------------------------------------|
| Acute toxicity (Oral)                              | : Category 4                               |
| Skin corrosion                                     | : Category 1C                              |
| Serious eye damage                                 | : Category 1                               |
| Specific target organ toxicity - repeated exposure | : Category 2 (Blood, hematopoietic system) |
| Short-term (acute) aquatic hazard                  | : Category 1                               |
| Long-term (chronic) aquatic hazard                 | : Category 1                               |

### Other hazards

None known.

### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H227 Combustible liquid.  
H302 Harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H373 May cause damage to organs (Blood, hematopoietic system) through prolonged or repeated exposure.  
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements :

**Prevention:**  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.  
P260 Do not breathe mist or vapours.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**  
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.  
P314 Get medical advice/ attention if you feel unwell.  
P363 Wash contaminated clothing before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.  
P391 Collect spillage.

**Storage:**

P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

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### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

CAS-No. : 371-40-4

**Components**

| Chemical name   | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|-----------------|-------------------|-----------------------|--------------|
| 4-Fluoroaniline | 371-40-4*         | >= 90 - <= 100        | -            |

\* Indicates that the identifier is a CAS No.  
Actual concentration is withheld as a trade secret

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### SECTION 4. FIRST AID MEASURES

General advice : First aiders need to protect themselves. Show this safety data sheet to the doctor in attendance.  
If inhaled : After inhalation: fresh air. Call in physician.  
In case of skin contact : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

|                                                             |                                                                                                                                                                            |
|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| In case of eye contact                                      | : After eye contact: rinse out with plenty of water.<br>Immediately call in ophthalmologist.<br>Remove contact lenses.                                                     |
| If swallowed                                                | : After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation).<br>Call a physician immediately.<br>Do not attempt to neutralise. |
| Most important symptoms and effects, both acute and delayed | : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11                                                      |
| Protection of first-aiders                                  | : For personal protection see section 8.                                                                                                                                   |
| Notes to physician                                          | : No data available                                                                                                                                                        |

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## SECTION 5. FIREFIGHTING MEASURES

|                                       |                                                                                |
|---------------------------------------|--------------------------------------------------------------------------------|
| Suitable extinguishing media          | : Water<br>Foam<br>Carbon dioxide (CO <sub>2</sub> )<br>Dry powder             |
| Unsuitable extinguishing media        | : For this substance/mixture no limitations of extinguishing agents are given. |
| Specific hazards during fire fighting | : Combustible.                                                                 |

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

|                               |                                                           |
|-------------------------------|-----------------------------------------------------------|
| Hazardous combustion products | : Carbon oxides<br><br>Nitrogen oxides (NO <sub>x</sub> ) |
|-------------------------------|-----------------------------------------------------------|

## Hydrogen fluoride

- Specific extinguishing methods : No data available
- Further information : Remove container from danger zone and cool with water.  
Suppress (knock down) gases/vapours/mists with a water spray jet.  
Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for fire-fighters : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Advice for non-emergency personnel:  
Do not breathe vapours, aerosols.  
Avoid substance contact.  
Ensure adequate ventilation.  
Keep away from heat and sources of ignition.  
Evacuate the danger area, observe emergency procedures, consult an expert.  
Advice for emergency responders:  
For personal protection see section 8.
- Environmental precautions : Do not let product enter drains.
- Methods and materials for containment and cleaning up : Cover drains. Collect, bind, and pump off spills.  
Observe possible material restrictions (see sections 7 and 10).  
Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

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### SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

- Advice on protection against fire and explosion : Keep away from open flames, hot surfaces and sources of ignition.  
Take precautionary measures against static discharge.

|                                           |                                                                                                                                           |
|-------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| Advice on safe handling                   | : Work under hood. Do not inhale substance/mixture.<br>Avoid generation of vapours/aerosols.                                              |
| Further information on storage conditions | : Tightly closed.<br>Keep in a well-ventilated place.<br>Keep locked up or in an area accessible only to qualified or authorised persons. |
| Storage class                             | : 6.1C, Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects                                       |
| Recommended storage temperature           | : Recommended storage temperature see product label.                                                                                      |

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## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

**Engineering measures** : No data available

### Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.  
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

### Hand protection

Material : butyl-rubber  
Break through time : 480 min  
Glove thickness : 0.7 mm  
Protective index : Full contact  
Manufacturer : Butoject® (KCL 898)

Material : Latex gloves  
Break through time : 30 min  
Glove thickness : 0.6 mm  
Protective index : Splash contact

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|                          |                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Manufacturer             | : Lapren® (KCL 706 / Aldrich Z677558, Size M)                                                                                                                                                                                                                                                                                                                                                 |
| Remarks                  | : This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: <a href="http://www.kcl.de">www.kcl.de</a> ). |
| Eye protection           | : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).<br>Tightly fitting safety goggles                                                                                                                                                                                                                             |
| Skin and body protection | : protective clothing                                                                                                                                                                                                                                                                                                                                                                         |
| Hygiene measures         | : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.                                                                                                                                                                                                                                                               |

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## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

|                             |                                               |
|-----------------------------|-----------------------------------------------|
| Appearance                  | : liquid (68 °F / 20 °C, 1,013 hPa)           |
| Color                       | : brown                                       |
| Odor                        | : unpleasant                                  |
| Odor Threshold              | : No data available                           |
| pH                          | : 7.37 (79 °F / 26 °C)                        |
| Freezing point              | : 28.6 °F / -1.9 °C                           |
| Boiling point/boiling range | : 369 °F / 187 °C (1,023 hPa)<br>Method: lit. |
| Flash point                 | : 162.9 °F / 72.7 °C<br>(966 hPa)             |
| Evaporation rate            | : No data available                           |
| Flammability (solid, gas)   | : No data available                           |
| Flammability (liquids)      | : No data available                           |

|                                                     |                                                                     |
|-----------------------------------------------------|---------------------------------------------------------------------|
| Burning rate                                        | : No data available                                                 |
| Upper explosion limit /<br>Upper flammability limit | : No data available                                                 |
| Lower explosion limit /<br>Lower flammability limit | : No data available                                                 |
| Vapor pressure                                      | : No data available                                                 |
| Relative vapour density                             | : No data available                                                 |
| Relative density                                    | : No data available                                                 |
| Density                                             | : 1.173 g/cm <sup>3</sup> (77 °F / 25 °C)<br>Method: lit.           |
| Solubility(ies)<br>Water solubility                 | : 10 g/l soluble (79 °F / 26 °C)                                    |
| Partition coefficient: n-<br>octanol/water          | : log Pow: 1.15 (77 °F / 25 °C)<br>Bioaccumulation is not expected. |
| Autoignition temperature                            | : No data available                                                 |
| Decomposition<br>temperature                        | : No data available                                                 |
| Viscosity<br>Viscosity, dynamic                     | : No data available                                                 |
| Viscosity, kinematic                                | : 19.8 mm <sup>2</sup> /s (79 °F / 26 °C)                           |
| Flow time                                           | : No data available                                                 |
| Explosive properties                                | : No data available                                                 |
| Oxidizing properties                                | : none                                                              |
| Molecular weight                                    | : 111.12 g/mol                                                      |
| Particle characteristics<br>Particle size           | : No data available                                                 |

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## SECTION 10. STABILITY AND REACTIVITY

Reactivity : Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point  
is to be rated as critical.

|                                    |                                                                                                                                                                                                             |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Chemical stability                 | : The product is chemically stable under standard ambient conditions (room temperature) .                                                                                                                   |
| Possibility of hazardous reactions | : Caution! In contact with nitrites, nitrates, nitrous acid possible liberation of nitrosamines!<br>Violent reactions possible with:<br>Strong oxidizing agents<br>acid halides<br>Acid anhydrides<br>acids |
| Conditions to avoid                | : Strong heating.                                                                                                                                                                                           |
| Incompatible materials             | : No data available                                                                                                                                                                                         |
| Hazardous decomposition products   | : In the event of fire: see section 5                                                                                                                                                                       |

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## SECTION 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 417 mg/kg

Remarks: (RTECS)

Inhalation: No data available

Dermal: No data available

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: irritating - 24 h

(Draize Test)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: irritating - 24 h

#### Respiratory or skin sensitization

No data available

#### Germ cell mutagenicity

Test system: Chinese hamster fibroblasts

Result: negative

#### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

- Blood, hematopoietic system

**Aspiration hazard**

No data available

**11.2 Additional Information**

RTECS: BY1575000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:****4-Fluoroaniline:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 16.9 mg/l  
End point: mortality  
Exposure time: 96 h  
Test Type: flow-through test  
Remarks: (ECHA)

**Ecotoxicology Assessment**

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

**Persistence and degradability****Components:****4-Fluoroaniline:**

Biodegradability : Remarks: No data available

**Bioaccumulative potential****Components:****4-Fluoroaniline:**

Bioaccumulation : Remarks: No data available

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Partition coefficient: n-octanol/water : log Pow: 1.15 (77 °F / 25 °C)  
Remarks: Bioaccumulation is not expected.

### **Mobility in soil**

#### **Components:**

##### **4-Fluoroaniline:**

Stability in soil : Remarks: No data available

### **Other adverse effects**

#### **Components:**

##### **4-Fluoroaniline:**

Additional ecological information : Discharge into the environment must be avoided.

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## **SECTION 13. DISPOSAL CONSIDERATIONS**

### **Disposal methods**

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

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## **SECTION 14. TRANSPORT INFORMATION**

### **International Regulations**

#### **IATA-DGR**

UN/ID No. : UN 2941  
Proper shipping name : Fluoroanilines  
Class : 6.1  
Packing group : III  
Labels : Division 6.1 - Toxic substances  
Packing instruction (cargo aircraft) : 663  
Packing instruction (passenger aircraft) : 655

#### **IMDG-Code**

UN number : UN 2941  
Proper shipping name : FLUOROANILINES  
  
Class : 6.1  
Packing group : III  
Labels : 6.1  
EmS Code : F-A, S-A

Marine pollutant : no

### **Transport in bulk according to IMO instruments**

Not applicable for product as supplied.

### **National Regulations**

#### **49 CFR Road**

UN/ID/NA number : UN 2941

Proper shipping name : Fluoroanilines

Class : 6.1

Packing group : III

Labels : Division 6.1 - Toxic substances

ERG Code : 153

Marine pollutant : no

Poison Inhalation Hazard : No

### **Special precautions for user**

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## **SECTION 15. REGULATORY INFORMATION**

### **CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

### **SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

### **SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Fire Hazard  
Acute Health Hazard

**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.

### **US State Regulations**

#### **Massachusetts Right To Know**

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

#### **Maine Chemicals of High Concern**

Product does not contain any listed chemicals

#### **Vermont Chemicals of High Concern**

Product does not contain any listed chemicals

### **Washington Chemicals of High Concern**

Product does not contain any listed chemicals

### **The components of this product are reported in the following inventories:**

TSCA : All substances listed as active on the TSCA inventory

### **TSCA list**

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

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## **SECTION 16. OTHER INFORMATION**

### **Full text of other abbreviations**

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United

States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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