

## SAFETY DATA SHEET

Version 8.4  
Revision Date 04/11/2022  
Print Date 05/28/2022

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : 2-(Trifluoromethyl)aniline

Product Number : A41607  
Brand : Aldrich  
CAS-No. : 88-17-5

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

Identified uses : Laboratory chemicals, Synthesis of substances

**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**

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

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Flammable liquids (Category 3), H226  
Acute toxicity, Oral (Category 4), H302  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Skin sensitization (Sub-category 1B), H317  
Specific target organ toxicity - repeated exposure, Oral (Category 2), Bone marrow, spleen,  
Liver, H373  
Short-term (acute) aquatic hazard (Category 3), H402  
Long-term (chronic) aquatic hazard (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal Word

Warning

Hazard statement(s)

|      |                                                                                                              |
|------|--------------------------------------------------------------------------------------------------------------|
| H226 | Flammable liquid and vapor.                                                                                  |
| H302 | Harmful if swallowed.                                                                                        |
| H315 | Causes skin irritation.                                                                                      |
| H317 | May cause an allergic skin reaction.                                                                         |
| H319 | Causes serious eye irritation.                                                                               |
| H373 | May cause damage to organs (Bone marrow, spleen, Liver) through prolonged or repeated exposure if swallowed. |
| H402 | Harmful to aquatic life.                                                                                     |
| H411 | Toxic to aquatic life with long lasting effects.                                                             |

Precautionary statement(s)

|                    |                                                                                                                                  |
|--------------------|----------------------------------------------------------------------------------------------------------------------------------|
| P210               | Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.                                                              |
| P233               | Keep container tightly closed.                                                                                                   |
| P240               | Ground/bond container and receiving equipment.                                                                                   |
| P241               | Use explosion-proof electrical/ ventilating/ lighting/ equipment.                                                                |
| P242               | Use only non-sparking tools.                                                                                                     |
| P243               | Take precautionary measures against static discharge.                                                                            |
| P260               | Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.                                                                             |
| P264               | Wash skin thoroughly after handling.                                                                                             |
| P270               | Do not eat, drink or smoke when using this product.                                                                              |
| P272               | Contaminated work clothing must not be allowed out of the workplace.                                                             |
| P273               | Avoid release to the environment.                                                                                                |
| P280               | Wear protective gloves/ eye protection/ face protection.                                                                         |
| P301 + P312 + P330 | IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.                                                      |
| P303 + P361 + P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.                             |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P314               | Get medical advice/ attention if you feel unwell.                                                                                |
| P333 + P313        | If skin irritation or rash occurs: Get medical advice/ attention.                                                                |
| P337 + P313        | If eye irritation persists: Get medical advice/ attention.                                                                       |
| P362               | Take off contaminated clothing and wash before reuse.                                                                            |
| P370 + P378        | In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.                                             |
| P391               | Collect spillage.                                                                                                                |
| P403 + P235        | Store in a well-ventilated place. Keep cool.                                                                                     |
| P501               | Dispose of contents/ container to an approved waste disposal plant.                                                              |

## 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

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Synonyms : 2-Aminobenzotrifluoride  
 α,α,α-Trifluoro-o-toluidine

Formula : C<sub>7</sub>H<sub>6</sub>F<sub>3</sub>N

Molecular weight : 161.12 g/mol

CAS-No. : 88-17-5

EC-No. : 201-806-7

| Component                      | Classification                                                                                                                                                                           | Concentration |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>2-aminobenzotrifluoride</b> |                                                                                                                                                                                          |               |
|                                | Flam. Liq. 3; Acute Tox. 4;<br>Skin Irrit. 2; Eye Irrit. 2A;<br>Skin Sens. 1B; STOT RE 2;<br>Aquatic Acute 3; Aquatic<br>Chronic 2; H226, H302,<br>H315, H319, H317, H373,<br>H402, H411 | <= 100 %      |

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material 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. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### 4.2 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

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

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**Unsuitable extinguishing media**

For this substance/mixture no limitations of extinguishing agents are given.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Hydrogen fluoride

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

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

**5.3 Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

**5.4 Further information**

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, 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. For personal protection see section 8.

**6.2 Environmental precautions**

Do not let product enter drains. Risk of explosion.

**6.3 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 with liquid-absorbent material (e.g. Chemisorb® ). Dispose of properly. Clean up affected area.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling****Advice on protection against fire and explosion**

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

**Hygiene measures**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities****Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

#### **Storage class**

Storage class (TRGS 510): 3: Flammable liquids

### **7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## **SECTION 8: Exposure controls/personal protection**

### **8.1 Control parameters**

#### **Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

### **8.2 Exposure controls**

#### **Appropriate engineering controls**

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### **Personal protective equipment**

##### **Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

##### **Body Protection**

Flame retardant antistatic protective clothing.

##### **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.

##### **Control of environmental exposure**

Do not let product enter drains. Risk of explosion.

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on basic physical and chemical properties**

- |                                            |                                                                     |
|--------------------------------------------|---------------------------------------------------------------------|
| a) Appearance                              | Form: clear, liquid<br>Color: light brown                           |
| b) Odor                                    | No data available                                                   |
| c) Odor Threshold                          | No data available                                                   |
| d) pH                                      | No data available                                                   |
| e) Melting point/freezing point            | Melting point/range: 34 °C (93 °F) - lit.                           |
| f) Initial boiling point and boiling range | 68 °C 154 °F at 20 hPa - lit.<br>170 - 173 °C (338 - 343 °F) - lit. |
| g) Flash point                             | 55 °C (131 °F) - closed cup                                         |

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|    |                                              |                                                                             |
|----|----------------------------------------------|-----------------------------------------------------------------------------|
| h) | Evaporation rate                             | No data available                                                           |
| i) | Flammability (solid, gas)                    | No data available                                                           |
| j) | Upper/lower flammability or explosive limits | No data available                                                           |
| k) | Vapor pressure                               | 2.1 hPa at 20 °C (68 °F)                                                    |
| l) | Vapor density                                | No data available                                                           |
| m) | Density                                      | 1.282 g/cm <sup>3</sup> at 25 °C (77 °F) - lit.                             |
|    | Relative density                             | No data available                                                           |
| n) | Water solubility                             | 3.4 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - soluble                |
| o) | Partition coefficient: n-octanol/water       | log Pow: 2.32 at 23 °C (73 °F) - Bioaccumulation is not expected.           |
| p) | Autoignition temperature                     | 540 °C (1004 °F)The substance or mixture is not classified as self heating. |
| q) | Decomposition temperature                    | No data available                                                           |
| r) | Viscosity                                    | No data available                                                           |
| s) | Explosive properties                         | No data available                                                           |
| t) | Oxidizing properties                         | none                                                                        |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

Violent reactions possible with:

Oxidizing agents  
Reducing agents  
acids

### 10.4 Conditions to avoid

Heating.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 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 - male and female - 1,870 mg/kg  
(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rat - male and female - 4,700 mg/kg  
(OECD Test Guideline 402)

#### Skin corrosion/irritation

Skin - Rabbit

Result: irritating - 4 h

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes. - 24 h

(OECD Test Guideline 405)

#### Respiratory or skin sensitization

Sensitisation test: - Guinea pig

Result: negative

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Micronucleus test

Species: Mouse

Cell type: Bone marrow

Application Route: Oral

Method: OECD Test Guideline 474

Result: negative

#### Carcinogenicity

IARC: No ingredient 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 ingredient 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

Oral - May cause damage to organs through prolonged or repeated exposure. - Bone marrow, spleen, Liver

**Aspiration hazard**

No data available

**11.2 Additional Information**

Repeated dose toxicity - Rat - female - Oral - 28 d - NOAEL (No observed adverse effect level) - 40 mg/kg

Cough, Shortness of breath, Headache, Nausea, Vomiting, May cause cyanosis., prolonged or repeated exposure can cause: Dizziness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

No description of any further symptoms is available.

Other information

The following applies to aromatic amines in general: systemic effect: methaemoglobinaemia with headache, cardiac dysrhythmia, drop in blood pressure, dyspnoea, and spasms, principal symptom: cyanosis (blue discolouration of the blood).

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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**SECTION 12: Ecological information****12.1 Toxicity**

Toxicity to fish                      static test LC50 - Danio rerio (zebra fish) - > 25 - < 35 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to bacteria

**12.2 Persistence and degradability**

Biodegradability                      aerobic - Exposure time 28 d  
Result: 3 % - Not readily biodegradable.  
(OECD Test Guideline 301B)

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 Endocrine disrupting properties**

No data available

**12.7 Other adverse effects**

No data available



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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

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. See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

#### DOT (US)

UN number: 2942    Class: 6.1    Packing group: III  
Proper shipping name: 2-Trifluoromethylaniline  
Reportable Quantity (RQ):  
Poison Inhalation Hazard: No

#### IMDG

UN number: 2942    Class: 6.1    Packing group: III    EMS-No: F-A, S-A  
Proper shipping name: 2-TRIFLUOROMETHYLANILINE

#### IATA

UN number: 2942    Class: 6.1    Packing group: III  
Proper shipping name: 2-Trifluoromethylaniline

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## SECTION 15: Regulatory information

#### SARA 302 Components

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

#### SARA 313 Components

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, Acute Health Hazard

#### Massachusetts Right To Know Components

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

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

#### Pennsylvania Right To Know Components

|                         |                    |                             |
|-------------------------|--------------------|-----------------------------|
| 2-aminobenzotrifluoride | CAS-No.<br>88-17-5 | Revision Date<br>2007-03-01 |
|-------------------------|--------------------|-----------------------------|

#### New Jersey Right To Know Components

|                         |                    |                             |
|-------------------------|--------------------|-----------------------------|
| 2-aminobenzotrifluoride | CAS-No.<br>88-17-5 | Revision Date<br>2007-03-01 |
|-------------------------|--------------------|-----------------------------|

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## SECTION 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 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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