



# Para trifluoromethylaniline

## Chemical Identity

<i>Brand names</i>	<b>p-trifluoromethylaniline (solution or pure)</b>	<i>CAS number</i>	<b>455-14-1</b>
<i>Chemical name (IUPAC)</i>	<b>4-(trifluoromethyl) aniline</b>	<i>Molecular formula</i>	<b>C<sub>7</sub>H<sub>6</sub>F<sub>3</sub>N</b>
<i>Synonyms</i>	<b>PTFMA, α,α,α-trifluoro-p-toluidine, 4-aminobenzotrifluoride, trifluoromethylphenylanilide, 4-(trifluoromethyl) benzenamine</b>	<i>Molecular weight</i>	<b>161.12 g/mol</b>

## Applications

PTFMA is used in solution, only for industrial purpose, as an intermediate for chemical synthesis of agrochemicals and veterinary products.

## Safety Assessment, Exposure and Risk Management Recommendations

### Physical and Chemical properties

Property	Result
Physical state	Liquid
Colour	Colourless to yellow
Odour	Aminated
Melting point	8 to 38°C
Boiling point	83°C
Density	1.29
Water solubility	Slightly soluble
Octanol water partition	Low potential for bioaccumulation

### Health effect



PTFMA causes serious eye damage and is toxic by inhalation or oral route of exposure. It causes damage after repeated exposure.

Stringent safety measures must be respected for industrial uses, for more details, please refer to the Safety Data Sheet.

### Environmental effect







PTFMA is very toxic to aquatic life, any exposure must be avoided. All industrial emissions and disposal, treatment or recycling must comply with applicable regulations to preserve environment.

## Regulatory information

### Classification and labelling

#### EU regulation (EC) 1272/2008 (CLP)

	Acute toxicity, Oral, Cat.3 Inhalation, Cat.3	H301 Toxic if swallowed H331 Toxic if inhaled
	Irritation, Eye, Cat. 1	H318 Causes serious eye damage
	STOT, repeated exposure Cat.1	H372 Causes damage to organs (blood) through prolonged or repeated exposure
	Aquatic toxicity Acute, Cat.1 Chronic, Cat.1	H400 Very toxic to aquatic life H410 Very toxic to aquatic life with long lasting effects

Danger

### Registration and certification

ISO 9001: 2008 certified  
EU regulation on chemicals (EC) 1907/2006 (REACH)

## GPS Safety Summary

# Para trifluoromethylaniline

## General Statement

---

Para trifluoromethylaniline (pTFMA) is an intermediate for synthesis in agrochemical industry.

PTFMA is a colourless to yellow substance, liquid with an aminated odour.

The pure substance may cause adverse effects to human health at short term; it causes serious eye damage and is toxic if inhaled or swallowed. It causes damage through repeated exposure.

The substance is only intended for industrial use and handled under Strictly Controlled Conditions in accordance with the European REACH regulation for intermediates, to control the risk of exposure and preserve human health and environment.

Consumer exposure is not expected.

## Chemical Identity

---

<b>Name:</b>	p-trifluoromethylaniline (p-TFMA)
<b>Brand names:</b>	p-trifluoromethylaniline solution, p-trifluoromethylaniline pure
<b>Chemical name (IUPAC):</b>	4-(trifluoromethyl) aniline
<b>Synonyms:</b>	$\alpha,\alpha,\alpha$ -trifluoro-p-toluidine, 4-aminobenzotrifluoride, trifluoromethylphenylanilide, 4-(trifluoromethyl) benzenamine, paratrifluoromethyl phenylamine, 4-aminotrifluoromethylbenzene
<b>CAS number:</b>	455-14-1
<b>EC number:</b>	207-236-5
<b>Molecular formula:</b>	C <sub>7</sub> H <sub>6</sub> F <sub>3</sub> N

### Structure:



## Uses and applications

---

PTFMA is used in solution, only for industrial purpose, as an intermediate for chemical synthesis of agrochemicals and veterinary products.

## Physical/Chemical Properties

---

### Phys/Chem Safety Assessment

Property	Value
Physical state	Liquid at 20°C and atmospheric pressure
Colour	Colourless to yellow
Odour	Aminated
Molecular weight	161.12 g/mol
Relative density	1.29-1.28 at 25-27°C
Melting Point range	8 - 38°C
Boiling Point	83°C at 16 hPa
Flash point	86°C (closed cup), non flammable
Water solubility	229-458 mg/L at 20°C and pH=2.9-3.1, slightly soluble
Octanol Water partition coefficient (log Kow)	1.95 at 20°C, low potential for bioaccumulation

Based on available data, pTFMA is not classified regarding physical and chemical hazards, according to EU regulation (EC) 1272/2008.

## Health Effects

---

### Human Health Safety Assessment

Effect Assessment	Result
Acute Toxicity Oral/inhalation/dermal	Toxic if swallowed or if inhaled Not classified for dermal route
Irritation / corrosion Skin/eye	Highly irritating to the eyes Slightly irritating to the skin but not sufficient for classification
Sensitisation	Not classified for skin sensitisation
Toxicity after repeated exposure Oral/inhalation/dermal	Classified for toxicity after repeated exposure for the three routes of exposure (Target organ: blood)
Genotoxicity / Mutagenicity	Not classified for either mutagenicity or genotoxicity
Carcinogenicity	No data available and not needed regarding regulation
Toxicity for reproduction	No data available and not needed regarding regulation

All these results are based on available data and the classification is in accordance with EU regulation (EC) 1272/2008.

## Environmental Effects

---

### Environment Safety Assessment

Effect Assessment	Result
Aquatic Toxicity	Very toxic to aquatic organisms May cause long-term adverse effects to the aquatic environment

Fate and behaviour	Result
Biodegradation	Not readily biodegradable
Bioaccumulation potential	Not potentially bioaccumulative (Log Kow = 1.95)
PBT / vPvB conclusion	Not considered to be either PBT or vPvB

Based on available data, pTFMA is classified as dangerous for the environment, according to EU regulation (EC) 1272/2008.

## Exposure

---

This substance is manufactured and handled under Strictly Controlled Conditions in accordance with the REACH regulation for intermediates.

### Human health

PTFMA is manufactured in a closed, continuous and automated process which minimizes the workers exposure potential. However where there is a risk of exposure, during sampling, analysis or maintenance operations, workers exposure is kept at a safe level (strictly below exposure limits, when applied) and controlled by the use of appropriate risk management measures as suitable collective and personal protective equipment, good industrial hygiene practices and risk communication through appropriate training of workers.

### Environment

PTFMA substance is classified as very toxic for the aquatic environment so any exposure must be avoided. Based on its physical and chemical properties, if pTFMA is released in the environment, it will be distributed mainly in the air.

All industrial releases that may contain the substance are directed to incineration and aqueous releases are directed to a waste water treatment plant.

## Risk Management Recommendations

---

PTFMA is manufactured and handled under Strictly Controlled Conditions in accordance with the REACH regulation for intermediates.

## Human health

For industrial uses of pTFMA substance, workers must be well informed and trained and must refer to the Safety Data Sheet (SDS). Where there is a risk of exposure to pTFMA (during (un)loading, sampling, analysis or maintenance operations), handling must be under adequate ventilation with an effective exhaust ventilation system. Contact with skin and eyes and breathing of vapours must be avoided, appropriate personal protective equipment must be worn as recommended in the SDS (tightly fitting safety goggles, appropriate gloves, self-contained breathing apparatus, boots, appropriate suit).

Hygiene measures must be respected (accessible emergency equipment, well-maintained PPE, wash hands and skin following contact, do not eat, drink or smoke on the workplace).

## Environment

PTFMA is very toxic to the aquatic environment, any release must be avoided. All industrial release that may contain the substance must be directed to incineration and all aqueous release must be directed to a waste water treatment plant.

Emissions in the air must be controlled in accordance with the environmental local regulation.

## State Agency Review

---

PTFMA has been registered under EU regulation (EC) 1907/2006 (REACH).

## Regulatory Information / Classification and Labelling

---

Substance classification and labelling according to EU regulation (EC) 1272/2008 (CLP):

### Classification

Acute toxicity, Oral, Category 3	H301 Toxic if swallowed
Acute toxicity, Inhalation, Category 3	H331 Toxic if inhaled
Irritation, Eye, Category 1	H318 Causes serious eye damage
STOT Repeated exposure, Category 1	H372 Causes damage to organs (blood) through prolonged or repeated exposure
Aquatic acute toxicity Category 1	H400 Very toxic to aquatic life
Aquatic toxicity, chronic, Category 1	H410 Very toxic to aquatic life with long lasting effects

### Labelling



Signal word :

**DANGER**

Hazard statements :

H331 Toxic if inhaled  
 H301 Toxic if swallowed  
 H318 Causes serious eye damage  
 H372: Causes damage to organs (blood) through prolonged or repeated exposure  
 H400: Very toxic to aquatic life  
 H410: Very toxic to aquatic life with long lasting effects

Precautionary statements :

P280 Wear protective gloves/protective clothing/eye protection/face protection  
 P314 Get medical advice / attention if you feel unwell  
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P273 Avoid release to the environment

## **Contact information within company**

---

For further information on this substance or product safety summaries in general, please contact:

Rhodia Global product Strategy: [http://www.rhodia.com/en/sustainability/global\\_product\\_strategy/index.tcm](http://www.rhodia.com/en/sustainability/global_product_strategy/index.tcm)

Contact: [globalproductstrategy@eu.rhodia.com](mailto:globalproductstrategy@eu.rhodia.com)

## **Additional information**

---

ICCA Global Product Strategy: <http://www.icca-chem.org/en/Home/ICCA-initiatives/global-product-strategy/>

(extended) Safety Data Sheet available on demand: [http://www.rhodia.com/en/contact/contact\\_form\\_business.tcm](http://www.rhodia.com/en/contact/contact_form_business.tcm)

Glossary of technical terms: [http://www.rhodia.com/en/sustainability/global\\_product\\_strategy/glossary/index.tcm](http://www.rhodia.com/en/sustainability/global_product_strategy/glossary/index.tcm)

**Date of issue:** December 2011

**Revision:** 1

---

## **Disclaimer**

The information provided in the present Safety Summary is based on European data available in REACH regulatory dossier (EC N°1907/2006) and is correct to the best of our knowledge, information and belief at the date of its publication. Such information is only intended to provide a general overview of the chemical substance in the context of ICCA Global Product Strategy and is not to be considered as a warranty or quality specification. It does not replace the safety data sheet and technical sheets. Thus, the information provided in this Safety Summary only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in another manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.