

Paramethoxyphenol

Chemical Identity

<i>Brand names</i>	Paramethoxyphenol	<i>CAS number</i>	150-76-5
<i>Chemical name (IUPAC)</i>	4- methoxyphenol	<i>Molecular formula</i>	C7H8O2
<i>Synonyms</i>	PMP, MEHQ, HQMME, Mequinol	<i>Molecular weight</i>	124.15 g/mol

Applications

Paramethoxyphenol is used in industry, mainly as a polymerisation inhibitor (petrochemicals), and as a synthesis intermediate (agrochemicals). It is also a stabilizer for the formulation of inks, adhesives or additives for textile and leather industries.

Safety Assessment, Exposure and Risk Management Recommendations

Physical and Chemical properties

Property	Result
Form	Crystalline solid flakes
Colour	Colourless to pale yellow
Odour	Slight phenol-like
Melting point	55 – 58 °C
Boiling point	234 – 243 °C
Water solubility	Soluble
Octanol water partition	Low potential for bioaccumulation

Health effect



PMP causes serious eye irritation and may cause an allergic skin reaction. Stringent safety measures must be respected for industrial uses, for more details, please refer to the Safety Data Sheet.

Environmental effect



Soluble in water but readily biodegradable, it will not be persistent. The potential for bioaccumulation is low and volatilisation is not expected. PMP is not classified as dangerous for the environment.

Industrial emissions and disposal, treatment or recycling of industrial waste must comply with applicable regulations to preserve environment.

Regulatory information and certifications

Classification and labelling

EU regulation (EC) 1272/2008 (CLP)



Warning

Acute toxicity, Oral	Cat. 4	H302	Harmful if swallowed
Skin sensitization	Cat. 1	H317	May cause an allergic skin reaction
Eye irritation	Cat. 2	H319	Causes serious eye irritation

Registration and certification

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

GPS Safety Summary

Paramethoxyphenol

General Statement

Paramethoxyphenol is used in industry, mainly as a polymerisation inhibitor (petrochemicals), and as a synthesis intermediate (agrochemicals). It is also a stabilizer for the formulation of inks, adhesives or additives for textile and leather industries.

Paramethoxyphenol is classified as a serious eye irritant, harmful if swallowed and a skin sensitizer. The pure substance is used only in industry and must be handled under stringent safety conditions in accordance with the risk assessment of the applications to preserve human health and environment. Consumer exposure is not expected.

Chemical Identity

Name: Paramethoxyphenol

Brand names: Paramethoxyphenol (powder, molten, flakes grades)

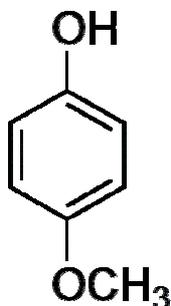
Chemical name (IUPAC): 4-methoxyphenol

Synonyms: PMP, MEHQ, HQMME, Mequinol

CAS number: 150-76-5

Molecular formula: C₇H₈O₂

Structure:



Uses and applications

Paramethoxyphenol is used in industry, mainly as intermediate for the synthesis of agrochemical products and as an inhibitor of polymerisation for monomers in petrochemical industry.

It is also a stabilizer for the formulation of inks and toners, adhesives and sealants and additives for textiles and leather industries.

Finally, it is used in other kind of formulations with a good confinement level.

Physical/Chemical Properties

Phys/Chem Safety Assessment

Property	Value
Form	Lump crystalline solid flakes
Physical state	Solid at 20°C Liquid at T > 55°C
Colour	Colourless to pale yellow
Odour	Slight phenol-like
Melting Point	55 – 58°C
Boiling Point	234 – 243°C
Flammability	Non flammable
Explosive properties	Non explosive
Self-ignition temperature	Not applicable (solid product and melting point < 160 °C)
Vapour pressure	0.9 Pa at 20°C, no potential for volatilisation
Molecular weight	124.15 g/mol
Water solubility	40 g/l at 25°C, soluble
Flash point	90°C at 1029 hPa (closed cup)
Octanol Water partition coefficient (log Kow)	1.3 at 20°C, low potential for bioaccumulation

Regarding physical and chemical hazards, paramethoxyphenol is not classified according to regulation (EC) 1272/2008.

Health Effects

Human Health Safety Assessment

Effect Assessment	Result
Acute Toxicity Oral /inhalation /dermal	- Harmful if swallowed - Not classified for dermal route - No data needed regarding inhalation classification as particle size is too high to reach the lower respiratory tract (> 100 µm)
Irritation / corrosion Skin /eye	- Not classified for skin irritation - Causes serious eye irritation
Sensitisation	Available studies show that Paramethoxyphenol may cause an allergic skin reaction.
Toxicity after repeated exposure Oral /inhalation /dermal	- Not classified for repeated toxicity after oral and dermal route - No data needed regarding inhalation classification as particle size is too high to reach the lower respiratory tract (> 100 µm).
Genotoxicity / Mutagenicity	Not classified either for mutagenicity or for genotoxicity
Carcinogenicity	Not classified for carcinogenicity based on several oral and dermal data
Toxicity for reproduction	Not classified: no effect on fertility and no developmental toxicity are expected.

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

Recommendation: Persons with a history of skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this substance is being used.

Environmental Effects

Environment Safety Assessment

Effect Assessment	Result
Aquatic Toxicity	Harmful to fish and algae Toxic to aquatic invertebrates

Fate and behaviour	Result
Biodegradation	Readily biodegradable PMP is degraded both under aerobic and anaerobic conditions
Bioaccumulation potential	Not potentially bioaccumulative (log Kow = 1.3)
PBT / vPvB conclusion	Not considered to be either PBT or vPvB.

Based on available data, Paramethoxyphenol is considered as toxic towards aquatic organisms but as it is readily biodegradable and not potentially bioaccumulative, it is not classified for the environment, according to EC 1272/2008 regulation.

Exposure

Human health

Paramethoxyphenol is only used in industrial applications. There is no direct consumer exposure.

Paramethoxyphenol is manufactured in a closed process which minimizes workers exposure potential. Workers risk of exposure in manufacturing facilities is also considered very low because the process, storage and handling operations are enclosed.

Paramethoxyphenol is classified as harmful if swallowed, may cause an allergic skin reaction and causes serious eye irritation, when workers might come in contact with the substance, during (un)loading, mixing, sampling, analysis or maintenance operations, the exposure must be 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

Paramethoxyphenol is readily biodegradable and may also degrade very quickly through photo transformation processes. It has no potential for volatilisation.

In addition, Paramethoxyphenol has a very low potential for adsorption and bioaccumulation.

Based on its physical and chemical properties, if Paramethoxyphenol is released into the environment, it would be mainly distributed in water and will not be persistent.

On the manufacturing site, the risk for the aquatic compartment is adequacy controlled as the releases are directed to a biological treatment plant.

For the use of Paramethoxyphenol as intermediate in agrochemical industry and as polymerisation inhibitor in petrochemical industry, the waste water has to reach a waste water treatment plant to avoid releases in the effluent.

For the other uses of PMP (ink, adhesives, sealants industries), no release to waste water is predicted.

The indirect risk of human exposure via the environment is not expected for Paramethoxyphenol.

Risk Management Recommendations

Human health protective measures:

For industrial uses of paramethoxyphenol substance, workers must be well informed and trained and must refer to the extended Safety Data Sheet (eSDS). Where there is a risk of exposure to paramethoxyphenol (during (un)loading, mixing, sampling, analysis or maintenance operations), handling must be under an adequate and efficient ventilation, appropriate personal protective equipment must be worn (safety goggles, gloves, protective suit) as PMP is eye irritating and may cause an allergic skin reaction. In case of dust or aerosol formation, wearing a respirator with approved filter is recommended. Paramethoxyphenol is not likely to reach lower respiratory tract, but based on its classification (eye irritant), irritant effects on the upper respiratory tract may be possible. 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 protective measures:

All effluent releases that may contain the substance must be directed to a waste water treatment plant that removes the substance from the final releases to the receiving water.

State Agency Review

Paramethoxyphenol has been registered as substance under the 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 4
 Skin sensitization, Category 1
 Eye irritation, Category 2

H302 Harmful if swallowed
 H317 May cause an allergic skin reaction
 H319 Causes serious eye irritation

Labelling

Pictogram :



Signal word :

WARNING

Hazard statements :

H302 Harmful if swallowed
 H317 May cause an allergic skin reaction
 H319 Causes serious eye irritation

Precautionary statements :

P280 Wear protective gloves / protective clothing / eye protection / face protection.
 P302 +P352 IF ON SKIN : Wash with plenty of soap and water
 P305 + P351 + P338 : IF IN EYES : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

Contact: 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

Glossary of technical terms: http://www.rhodia.com/en/sustainability/global_product_strategy/glossary/index.tcm

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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.