



Paradimethoxybenzene

Chemical Identity

<i>Brand names</i>	Paradimethoxybenzene or PDMB	<i>CAS number</i>	150-78-7
<i>Chemical name (IUPAC)</i>	1,4- dimethoxybenzene	<i>Molecular formula</i>	C₈H₁₀O₂
<i>Synonyms</i>	Hydroquinone dimethyl ether, p-methoxyanisol	<i>Molecular weight</i>	138.18 g/mol

Applications

Paradimethoxybenzene (PDMB) is used in industry as an intermediate for fine chemical synthesis or as an ingredient in perfumes or detergents formulation. It is also used in dyes (yellow pigment).

Safety Assessment, Exposure and Risk Management Recommendations

Physical and Chemical properties

Property	Result
Form	Crystalline solid
Colour	White to slightly yellow
Odour	Aromatic
Melting point	53 – 60 °C
Boiling point	210 – 213 °C
Water solubility	Soluble
Octanol water partition	Low potential for bioaccumulation

Health effect



Based on available studies results, PDMB is not classified as dangerous for human health and environment. It is formulated in final products to comply with the most stringent regulation for all applicable consumer uses.



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, PDMB will not be persistent and its potential for bioaccumulation is low. Emissions in the air are unexpected. PDMB is not classified as dangerous for the environment. Industrial emissions and disposal, treatment or recycling must comply with applicable regulations to preserve environment.

Regulatory information and certifications

Classification and labelling

EU regulation (EC) 1272/2008 (CLP)

Paradimethoxybenzene is not classified as dangerous regarding physical and chemical hazards, according to the regulation criteria. PDMB is not classified as dangerous either for the human health or for the environment, according to the regulation criteria.

Registration and certification

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

GPS Safety Summary

Paradimethoxybenzene

General Statement

Paradimethoxybenzene (PDMB) is an aromatic ether with a sweet floral odor. It occurs naturally in willow (Salix) and zucchini (Cucurbita pepo).

Synthetic PDMB is a side-product from the synthesis of paramethoxyphenol (PMP), produced by methylation of hydroquinone. It is mainly used as a fine chemical intermediate or in formulation.

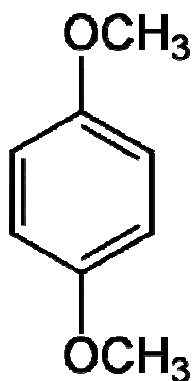
PDMB is not classified as dangerous for human health and for environment. It is formulated in final products to comply with the most stringent regulation for all applicable consumer uses to ensure safe use.

In industry the pure product presents no specific risk for human health and environment when it is handled in accordance with good occupational hygiene and safety practices and when disposal, treatment or recycling of industrial waste comply with applicable regulations.

Chemical Identity

Name:	Paradimethoxybenzene
Brand names:	PDMB or Paradimethoxybenzene
Chemical name (IUPAC):	1, 4-dimethoxybenzene
Synonyms:	Hydroquinone dimethyl ether, p-methoxyanisole, 2-benzimidazolinone
CAS number:	150-78-7
Molecular formula:	C ₈ H ₁₀ O ₂

Structure:



Uses and applications

PDMB is used in industry, as intermediate for chemical synthesis or as a formulation ingredient in cosmetics, personal care products, detergents (washing and cleaning products) and flavouring agents.

Physical/Chemical Properties

Phys/Chem Safety Assessment

Property	Value
Form	Crystalline
Physical state	Solid at 20°C Liquid at T > 53°C
Colour	White to slightly yellow
Odour	Aromatic
Molecular weight	138.18 g/mol
Melting Point	53 – 60°C
Boiling Point	210 – 212.6°C
Flash point	91°C at atmospheric pressure (closed cup)
Flammability	Non flammable
Explosive properties	Non explosive
Self-ignition temperature	430°C at atmospheric pressure
Vapour pressure	0.056 hPa at 20°C
Water solubility	785 mg/l at 20°C, soluble
Octanol Water partition coefficient (log Kow)	2.08 at 20°C, low potential for bioaccumulation

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

Health Effects

Human Health Safety Assessment

Effect Assessment	Result
Acute Toxicity Oral /inhalation /dermal	Not classified for acute toxicity based on several oral and dermal data
Irritation / corrosion Skin /eye	Conclusive data and not classified for irritation
Sensitisation	Not classified for sensitisation based on several dermal data
Toxicity after repeated exposure Oral /inhalation /dermal	Not classified for repeated toxicity based on several oral data
Genotoxicity / Mutagenicity	Conclusive data and not classified for either mutagenicity or genotoxicity
Carcinogenicity	No data available
Toxicity for reproduction	No data available

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

Environmental Effects

Environment Safety Assessment

Effect Assessment	Result
Aquatic Toxicity	Harmful to aquatic organisms

Fate and behaviour	Result
Biodegradation	Readily biodegradable
Bioaccumulation potential	Not potentially bioaccumulative (log Kow = 2.08)
PBT / vPvB conclusion	Not considered to be either PBT or vPvB.

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

Exposure

The substance is manufactured in a closed, continuous and automated process which minimizes workers and environment exposure potentials and is handled under Strictly Controlled Conditions in accordance with the REACH regulation for intermediates.

For the uses in formulation, the process is a multi-stage mixing of substances in batch, human and environmental exposure is controlled by the compliance with risk management measures.

Human health

Where there is a risk of exposure to the pure or formulated substance, during (un)loading, mixing, sampling, analysis or maintenance operations, the workers exposure is kept at a safe level 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.

Consumer products containing the substance are formulated in suitable concentration to comply with requirements of the most stringent regulations for all applicable consumer uses to ensure their safe use.

Environment

Based on its physical and chemical properties, if PDMB is released in the environment, it will be mainly distributed in the water. As it is readily biodegradable, it will not be persistent in the aquatic compartment. In addition, PDMB has a low potential for bioaccumulation.

On the manufacturing site, the risk for the aquatic compartment is adequately controlled and the releases are directed to a physico-chemical and biological treatment plant.

Risk Management Recommendations

On the manufacturing site, PDMB is handled under Strictly Controlled Conditions in accordance with the REACH regulation for intermediates.

Human health

For industrial uses of PDMB substance, and as recommended for the use of any chemical product, workers must be well informed and trained and must refer to the Safety Data Sheet (SDS).

Where there is a risk of exposure to PDMB (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). 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).

For consumer uses, PDMB is formulated in suitable concentrations according to appropriate regulations to ensure the final product safe use, in the conditions of use written on the packaging.

Environment

All effluent releases that may contain significant amount of the substance must be directed to a waste water treatment plant. Any discharge of the product in the environment must be avoided. Disposal, treatment or recycling of industrial waste must comply with applicable regulations.

State Agency Review

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

Paradimethoxybenzene complies with the requirements of the European regulations for the use in all applicable consumer applications.

Regulatory Information / Classification and Labelling

PDMB is not classified as dangerous regarding the criteria of the EU regulation (EC) 1272/2008 (CLP).

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.