

TECHNICAL BULLETIN



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HYDROGEN PEROXIDE

35% Solution

DESCRIPTION

HYDROGEN PEROXIDE is marketed as an aqueous solution. **HYDROGEN PEROXIDE** solutions are clear, colourless liquids, miscible with water in all proportions. The commercial product contains low levels (<1%) of stabilizers. Technical grade solutions are in fact, relatively pure and are used for the vast majority of applications. Special grades are produced for a number of applications.

TYPICAL PROPERTIES

Technical Data

Appearance	clear, colourless liquid		
PEROXIDE content (w/w)	27.5%	35%	50%
PEROXIDE content (w/v at 20°C)	30.3	39.6	59.8
Oxygen liberated (v/v)	100	130	197
Density (kg/l at 25°C)	1.10	1.13	1.20
Freezing Point (°C)	-23	-33	-52
Boiling Point (°C)	106	107	114
Diluent	water		

Miscibility at 20°C

Miscible in all proportions with water

Thermal Stability

Recommended storage temperature ... ambient

Strength loss at 25°C Less than 1% per annum

Packaging, Transport

Container type	Net Contents
HD polyethylene carboy	25 kg ⁽¹⁾
HD polyethylene drum	225 kg
Stainless steel road tank	2,500 kg
ISO tank	20,000 kg
Transport temperature	Ambient

Transport and Packaging Regulations

The transport of **HYDROGEN PEROXIDE** must conform to any local regulations of competent authorities.

Regulation	Class	Risk	Subsidiary Group	Packaging Reference
ADG Code ⁽²⁾	5.1	8 II	Sect. 7 & 9	
IMDG Code	5.1	8 II	5043	
IATA ⁽³⁾	5.1	8	Forbidden	

(1) For 27.5%, 35% and 50% product only.

(2) The current edition of the Australian Code for the Transport of Dangerous Goods by Road and Rail.

(3) The current edition of the Dangerous Goods Regulations, International Air Transport Association.

Hazardous Properties of SOLVAY INTEROX HYDROGEN PEROXIDE

HYDROGEN PEROXIDE solution in contact with eyes can cause severe and permanent corneal damage. Vapour from concentrated **HYDROGEN PEROXIDE** solutions can irritate and inflame the mucous membranes of the nose and throat. Skin contact with concentrated **HYDROGEN PEROXIDE** for prolonged periods of time can result in thermal and/or chemical burns. The currently accepted TLV value is 1.4 mg H₂O₂/M³ air.

HYDROGEN PEROXIDE is incompatible with strong acids, alkalis, reducing agents, oxidizing agents, rust, transition metals and their compounds, resins, promoters, accelerators and combustible materials. Although **HYDROGEN PEROXIDE** by itself is not combustible, decomposition of concentrated **HYDROGEN PEROXIDE** generates both heat and an oxygen-rich environment which together can promote combustion of organic materials.

Safe Handling of SOLVAY INTEROX HYDROGEN PEROXIDE

Safety measures

Avoid contact with eyes and skin. When working with this product always wear eye protection and protective clothes and gloves. Ensure adequate ventilation in areas where the product has ready access to the workplace atmosphere. Do not eat, drink or smoke in areas where this material is used.

First Aid

If swallowed give water to drink. DO NOT induce vomiting. Seek medical advice from doctor or Poisons Information Centre without delay. If eye contact occurs, immediately irrigate with water continuously until medical attention is obtained. If skin contact occurs, wash skin with ample water. Remove any contaminated clothing and launder thoroughly before re-use. Seek medical attention if symptoms develop. If inhaled, remove from source of exposure. If required, seek medical advice. Advice to doctor: treat symptomatically; if eye contact, refer to eye specialist.

FIRE

Use large quantities of fine water spray from a safe distance, to cool and extinguish fires involving this product.

STORAGE , HANDLING

HYDROGEN PEROXIDE solutions should be stored upright in the original vented containers or approved, chemically passivated, vented storage tanks made of stainless steel grade 304L or 316L, away from sources of heat and preferably not in direct sunlight. Keep storage area free from combustible materials and incompatible chemicals. Eyewash, safety shower and water spray facilities must be available in the immediate vicinity. Storage facilities should conform to the Dangerous Goods Regulations or the regulations of the competent authority in other states. **HYDROGEN PEROXIDE** solutions must not be stored with any other dangerous goods falling under classes: 1 (explosive), 2 (compressed gases), 3 (flammable liquids), 4 (combustible solids), 5 (other oxidizing agents and organic peroxides) and 8 (corrosive). Detailed guidelines are available from Solvay Interox regarding design and fabrication of **HYDROGEN PEROXIDE** storage depots and bulk storage tanks.

TRANSFER

Where possible **HYDROGEN PEROXIDE** solutions should be dosed directly from the supply container. Alternatively, scrupulously clean plastic, glass or stainless steel pourers may be used. The equipment must be used for this purpose only and should be clearly marked to this effect. Any equipment used for storage, transfer or dosing of **HYDROGEN PEROXIDE** solutions must be constructed so as to provide adequate venting and preclude the possibility of "locked-in" sections of pipework or valves. Detailed guidelines are available from Solvay Interox.

MIXING

It is essential that undiluted **HYDROGEN PEROXIDE** solutions are not mixed with incompatible materials or violent decomposition and/or an explosion may occur.

DISPOSAL

Residues of **HYDROGEN PEROXIDE** solutions must never be returned to the storage container. Any residues or spillages should be disposed of to waste with adequate dilution. **HYDROGEN PEROXIDE** carboys and drums should be thoroughly washed out with water, have the labels removed and be punctured prior to disposal to waste.

IMPORTANT NOTICE TO CUSTOMER

Since the use of this product is beyond the control of either seller or manufacturer, their only obligation shall be to replace any quantity of product which is proven defective. They cannot assume any risk or liability in excess of the purchase price of the product itself, which does not include labour or any consequential damages resulting from the use of this product. Determining the suitability of this product for any intended use shall be solely the responsibility of the user.

ALWAYS TEST FIRST.