

Hydrogen Peroxide

Safety data sheet in the 16-section GHS format · CAS 7722-84-1

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1. Identification of the substance and of the supplier

Product name	Hydrogen Peroxide
Synonyms	H2O2, hydrogen peroxide 50, peroxide bleach
C.A.S. number	7722-84-1 (hydrogen peroxide). The 50% material is an aqueous solution of this single substance, so the CAS is definitive.
Molecular formula	H2O2
Grade supplied	50% technical
Product group	Industrial Salts & Inorganics
Identified uses	Textiles, Pulp & paper, Effluent treatment, Chemicals, Disinfection, Mining & metals
Supplier	Velora Chemicals Private Limited
Emergency contact	Medical, fire or spill emergency — call the emergency services first: 112 (all-India), 101 fire, 108 ambulance. Velora Chemicals Private Limited does not at present operate a 24-hour chemical emergency advice line, and this sheet does not pretend otherwise. Every consignment despatched by road carries an emergency information panel under rule 134 of the Central Motor Vehicles Rules 1989 bearing a number from which expert advice on this material can be obtained, and the producer's safety data sheet issued with the consignment carries the producer's own 24-hour number where one is operated. For product, grade and documentation queries in business hours: +91 99255 22674.

2. Hazards identification

GHS signal word	Danger
Hazard classification	Ox. Liq. 2 - H272; Acute Tox. 4 (oral) - H302; Acute Tox. 4 (inhalation, mist) - H332; Skin Corr. 1A - H314; STOT SE 3 (respiratory irritation) - H335 (Columbus Chemical 50% technical SDS). This is supplier self-classification and suppliers differ on the skin/eye endpoint for 50%: one EU 50% SDS gives Skin Irrit. 2 (H315) plus Eye Dam. 1 (H318) instead of H314, and an Indian 50% w/w SDS adds Aquatic Acute 2 (H401). There IS an EU harmonised CLP Annex VI entry for hydrogen peroxide solution and it carries specific concentration limits so that the category changes with % H2O2; ECHA blocked automated access during this research, so the harmonised wording for the 50% band could not be read first-hand. Verify the label text against CLP Annex VI (or your supplier's EU SDS) before printing - do not copy the 35% or the 60%+ label onto a 50% drum.

3. Composition / information on ingredients

Substance	Hydrogen Peroxide
C.A.S. number	7722-84-1 (hydrogen peroxide). The 50% material is an aqueous solution of this single substance, so the CAS is definitive.
Molecular weight	34.01 g/mol (given as 34.0 on the ILO ICSC card). This is the molecular weight of hydrogen peroxide itself; the 50% product is a water solution and has no single molecular weight.

Composition	50% technical
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4. First-aid measures

Eye contact	Irrigate immediately with clean running water for at least 15-20 minutes, holding the eyelids wide apart; remove contact lenses if easy to do and keep irrigating. Get medical attention at once - 50% peroxide can damage the cornea - and continue irrigation on the way to hospital.
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Skin contact	Flood the affected skin immediately with large amounts of water and keep flushing for at least 15 minutes while removing contaminated clothing and footwear. Temporary whitening/blanching of the skin with stinging is characteristic. Get medical attention for any burn, blistering or persisting pain. Wash contaminated clothing thoroughly before re-use and never let peroxide-wetted clothing or rags dry out, because they can ignite.
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Inhalation	Move the person to fresh air at once and keep them at rest in a half-upright position. Give oxygen if breathing is laboured; give artificial respiration if breathing has stopped. Refer for medical observation even if the person appears to recover, because inhaled mist can cause delayed pulmonary oedema.
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Ingestion	Do NOT induce vomiting. Rinse the mouth. If the person is conscious, have them drink plenty of water immediately to dilute the stomach contents. Get medical attention/transport to hospital at once - large volumes of oxygen gas are liberated in the stomach and there is a real risk of gastric distension and of aspiration. Never give anything by mouth to an unconscious person.
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5. Fire-fighting measures

Flash point	Not flammable - hydrogen peroxide solution has no flash point. It is an oxidiser: it will intensify a fire and can cause combustible material (wood, paper, cloth, sawdust) to ignite spontaneously as it dries.
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Suitable extinguishing media	Water fog, foam, dry chemical powder or carbon dioxide, chosen to suit the surrounding fire. The substance itself does not contribute fuel.
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Unsuitable extinguishing media	Do not use a high-pressure water jet: it will spread the material and the fire.
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Special hazards arising from the substance	Hazardous gases and decomposition products may be formed in a fire, from this substance or from its packaging and the materials stored with it. Packaging and pallets are themselves a substantial fire load. That is true even though the contents do not contribute fuel.
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Advice for fire-fighters	Fire-fighters must wear self-contained breathing apparatus and full protective clothing. Keep unnecessary personnel away and upwind. Prevent firefighting run-off from entering drains, surface water or groundwater.
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6. Accidental release measures

Keep unnecessary personnel away and upwind, and ventilate. Wear the protective equipment in section 8 before approaching. Stop the leak if it is safe to do so, then bund or dike the spill and prevent entry to drains, surface water and groundwater. Absorb with an inert absorbent and collect into labelled, closable containers for disposal under section 13. Do not return spilled material to the original container.

7. Handling and storage

- Peroxide decomposes, and the decomposition accelerates with heat and with contamination — particularly by metals, dust and organics. Storage must be scrupulously clean, vented, and out of direct sun. A sealed contaminated container can pressurise dangerously.
- Only use passivated stainless, aluminium of the correct grade, or approved plastics. Never use ordinary mild steel, and never return unused material to the bulk tank — that is how a whole tank gets contaminated.

- It is an oxidiser, so segregate it from organics and flammables. Vent caps on drums and carboys are there for a reason and must not be replaced with solid closures.
- At the strengths we supply this material blinds and burns. A splash of 50% peroxide in the eye causes immediate and potentially permanent corneal injury, and on skin it blanches and burns within seconds. Face shield over goggles — not goggles alone — chemical apron and gloves, with an eyewash and safety shower immediately at the dosing point. First aid is to flood with water for at least 15 minutes and get medical attention.
- UN 2014, Class 5.1 oxidiser with a Class 8 corrosive subsidiary risk, Packing Group II. Note that above 60% the hazard and regulatory picture changes materially, and above roughly 70% the material can support deflagration — moving up in strength is not simply a freight optimisation, so talk to us before you do it.

Storage: Store cool, shaded and well ventilated, out of direct sunlight and UV, away from all heat sources. Containers and tanks must be VENTED - never seal tightly, because slow decomposition builds pressure. Use only passivated aluminium, 304L/316L stainless steel or approved vented HDPE; keep the system scrupulously clean. Keep separated from combustibles, organics, reducing agents, acids, alkalis and metals, and keep out of drains. Store in a bunded area with a water deluge/dilution facility. Never return decanted or unused material to the original container. Stock rotates - strength falls slowly on storage.

8. Exposure controls / personal protection

Engineering controls. Enclose every transfer, tipping, bag-slitting and sampling point and fit local exhaust extraction at each, and keep airborne concentrations below the limit in force at the place of use. Provide an eyewash within reach of the working position, and a safety shower wherever the material is classified corrosive or irritant or is handled in quantity. Do not eat, drink or smoke in the handling area; wash before breaks. Where no limit is stated above, occupational exposure limits vary by jurisdiction: check the limit in force at the place of use and the producer's sheet for the grade supplied, and record which value your assessment adopted. Select eye, skin and respiratory protection on the strength of a measured or modelled exposure assessment, not on this sheet alone.

9. Physical and chemical properties

Appearance	Clear, colourless liquid with a slightly pungent/sharp odour. No suspended matter.
Physical state	Liquid (aqueous solution)
Melting / freezing point	-52 degC freezing point for 50% w/w aqueous solution (Solvay technical data). Pure hydrogen peroxide freezes at about -0.4 degC, and the 70% and 90% solutions at about -39 degC and -11 degC, so do not carry a value across concentrations.
Boiling point	114 degC at 760 mmHg for 50% w/w solution (Solvay technical data). In practice the solution decomposes rather than distilling; never boil or evaporate it.
Relative density	1.20 g/mL at 20 degC (Solvay technical data for 50% w/w); relative density 1.19-1.20 (Columbus Chemical 50% technical SDS)
Solubility in water	Miscible with water in all proportions
pH	Acidic as supplied. One 50% w/w producer SDS states pH < 2.0 and another 50% SDS states pH 3 measured on the neat product. The figure depends on the acid stabiliser package used, so publish the value from your own batch COA and state that it refers to the undiluted 50% w/w solution.
Flash point	Not flammable - hydrogen peroxide solution has no flash point. It is an oxidiser: it will intensify a fire and can cause combustible material (wood, paper, cloth, sawdust) to ignite spontaneously as it dries.
Auto-ignition / ignition temperature	Not available
Explosive / dust-explosion properties	Not available

Vapour pressure	Not available
Vapour density	Not available
Partition coefficient (log Pow)	Not available
Particle characteristics	Not available
Molecular weight	34.01 g/mol (given as 34.0 on the ILO ICSC card). This is the molecular weight of hydrogen peroxide itself; the 50% product is a water solution and has no single molecular weight.

10. Stability and reactivity

Incompatible materials	Acids and alkalis/bases; reducing agents; all organic and combustible material (paper, cloth, wood, sawdust, oils, greases); acetone, alcohols and glycerol (detonable mixtures reported above 30% H ₂ O ₂); metals and metal salts/oxides - iron and mild steel, copper, brass, bronze, nickel, zinc, manganese, chromium, silver, lead and their salts all catalyse violent decomposition; cellulose-based and expanded-polymer absorbents; synthetic rubbers and polypropylene; dirt, rust and any unknown contaminant. Only passivated aluminium (min. 99.5%), 304L/316L stainless steel, approved HDPE and PTFE are suitable wetted materials.
Conditions to avoid	Store cool, shaded and well ventilated, out of direct sunlight and UV, away from all heat sources. Containers and tanks must be VENTED - never seal tightly, because slow decomposition builds pressure. Use only passivated aluminium, 304L/316L stainless steel or approved vented HDPE; keep the system scrupulously clean. Keep separated from combustibles, organics, reducing agents, acids, alkalis and metals, and keep out of drains. Store in a bunded area with a water deluge/dilution facility. Never return decanted or unused material to the original container. Stock rotates - strength falls slowly on storage.

11. Toxicological information

The health hazards classified for this substance are listed in section 2, and the corresponding first-aid measures in section 4. Numerical toxicological endpoints are not reproduced here: refer to the producer's safety data sheet for the grade supplied, and to the ECHA and PubChem entries for the substance.

12. Ecological information

Where section 2 or section 14 classifies this substance as hazardous to the aquatic environment, prevent any release to drains, surface water or groundwater and treat aqueous effluent before discharge. Otherwise, refer to the producer's sheet.

13. Disposal considerations

Dispose of the substance and its container through an authorised facility under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 where the waste is scheduled under those Rules, and otherwise as non-hazardous industrial waste, in each case under the conditions of the State Pollution Control Board consent in force at the site. Whether a particular waste stream is scheduled depends on the substance and on what it has been mixed with, so classify the waste before consigning it. Do not reuse empty containers for any other purpose.

14. Transport information

UN number	UN 2014
Class	5.1 (Oxidising substances) with subsidiary hazard 8 (Corrosive)
Packing group	II
Proper shipping name	HYDROGEN PEROXIDE, AQUEOUS SOLUTION with not less than 20% but not more than 60% hydrogen peroxide (stabilized as necessary)

15. Regulatory information

Supply in India is subject to the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 where the substance is scheduled, and to any product-specific licensing named on the product page. Classification and labelling follow the GHS as adopted in the jurisdiction of use.

Note: The UN entry and hazard class change with concentration band, and this is the single most commonly published error on peroxide paperwork: below 8% H₂O₂ not subject to UN transport regulations (still classified under GHS); not less than 8% but less than 20% = UN 2984, Class 5.1, PG III; not less than 20% but not more than 60% = UN 2014, Class 5.1 with subsidiary 8, PG II - this is the band 50% falls in; more than 60% (stabilized) = UN 2015, Class 5.1 with subsidiary 8, PG I. The ILO ICSC card numbered 0164 covers hydrogen peroxide ABOVE 60% only - its physical data (boiling point 141/125 degC, relative density 1.4/1.3, melting point -11/-39 degC) are for 90% and 70% solutions and must NOT be printed on a 50% datasheet. 'Technical grade' 50% differs from electronic/food/cosmetic grades in stabiliser and metals content, not in hazard class. Spills must be diluted with large amounts of water, never absorbed with sawdust, paper or cloth.

16. Other information

Version	1.0
Date of issue	07 October 2026
Supersedes	No previous version
Regulatory basis as at the date of issue	EU CLP Regulation 1272/2008 as amended, including Annex VI harmonised classifications; UN Model Regulations and the IMDG Code Amendment 42-24, mandatory from 1 January 2026; ADR 2025; and, in India, the Manufacture, Storage and Import of Hazardous Chemical Rules 1989 and the Central Motor Vehicles Rules 1989.

How this sheet was compiled and what governs. This sheet was prepared by Velora Chemicals Private Limited as the supplier, from PubChem, the ECHA CLP inventory including Annex VI harmonised classifications, ILO International Chemical Safety Cards and published producer safety data sheets. Values that could not be confirmed from those sources are shown as "Not available" rather than estimated. **The producer's safety data sheet for the specific grade and lot supplied is the governing document** and is issued with the consignment; where the two differ, the producer's sheet prevails. This sheet carries no warranty of the properties of any particular batch. Velora Chemicals Private Limited is a bulk supplier and trader, not a manufacturer.

Sources consulted: https://chemicalsafety.ilo.org/dyn/icsc/showcard.display?p_card_id=0164;
<https://www.solvay.com/sites/g/files/srpend616/files/2019-10/H2O2%20Safety%20and%20Handling%20of%20Hydrogen%20Peroxide.pdf>;
<https://cameochemicals.noaa.gov/chemical/890>;
<https://www.columbuschemical.com/MSDS/SDS/Hydrogen%20Peroxide%2050%25%20Technical%202700.pdf>;
<https://naperol.com/downloads/product-data-sheet/SDS-50-H2O2.pdf>;
https://www.intemax.co.uk/files/ww/MSDS%20Hydrogen%20Peroxide%2050__2c%2029kg.pdf;
<https://pubchem.ncbi.nlm.nih.gov/compound/784>; <https://adr-tool.com/2161/un-2984>