

TECHNICAL DATA SHEET

Hydrogen Peroxide 5% ACS Grade

ACS Grade · 5%

CAS NUMBER
7722-84-1

ALLIANCE CODE
hydrogen-peroxide-5-accs-grade

GENERATED
2026-07-18

1. IDENTITY & COMPOSITION

PRODUCT NAME
Hydrogen Peroxide 5% ACS Grade

ALLIANCE CODE
hydrogen-peroxide-5-accs-grade

GRADE
ACS Grade

CONCENTRATION
5%

CAS NUMBER
7722-84-1 [PubChem](#)

FORMULA
H2O2 [PubChem](#)

MOLECULAR WEIGHT
34.015 [PubChem](#)

PRODUCT TYPE
solution

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE ACS Grade	5%	—	current
ACS Grade	30%	—	hydrogen-peroxide-30-accs-grade
ACS Grade	25%	—	hydrogen-peroxide-25-accs-grade
Technical Grade	25%	—	hydrogen-peroxide-25-technical-grade
ACS Grade	15%	—	hydrogen-peroxide-15-accs-grade

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
Technical Grade	15%	—	hydrogen-peroxide-15-technical-grade
ACS Grade	12%	—	hydrogen-peroxide-12-accs-grade
Technical Grade	12%	—	hydrogen-peroxide-12-technical-grade
ACS Grade	10%	—	hydrogen-peroxide-10-accs-grade
Technical Grade	10%	—	hydrogen-peroxide-10-technical-grade
ACS Grade	6%	—	hydrogen-peroxide-6-accs-grade
Technical Grade	6%	—	hydrogen-peroxide-6-technical-grade
Technical Grade	3%	—	hydrogen-peroxide-3-technical-grade

Typical assay shown is the rolling-window mean from the sibling product's most recent lots. Grade selection drives downstream end-use — verify the sibling grade matches your specification before substitution.

PHYSICAL & CHEMICAL PROPERTIES

One or more physical-property values are temporarily suppressed pending verification against vendor COA data. For complete properties refer to the Safety Data Sheet (SDS) or contact sales@alliancechemical.com.

FORM

Liquid **Product record**

PH

Weak acid; H₂O₂ concn wt% = 35, 50, 70, 90;
corresponding true pH: 4.6, 4.3, 4.4, 5.1

Product record

DENSITY

1.02 (5% w/w aqueous solution, 20 °C)

Product record

MELTING POINT

Not characterized for the 5% solution

Product record

VAPOR PRESSURE

1 mmHg at 59.5 °F (NTP, 1992) **Product record**

ODOR

... Slightly sharp odor ... **Product record**

SPECIFIC GRAVITY (20 °C)

1.02 **Product record**

BOILING POINT

Not characterized for the 5% solution

Product record

FLASH POINT

93 **Product record**

SOLUBILITY (WATER)

greater than or equal to 100 mg/mL at 72 °F
(NTP, 1992) **Product record**

Oxidizer — decomposition rate and gas-evolution data may apply. Consult the SDS for material-of-construction guidance under shipping and storage conditions.

MATERIALS OF CONSTRUCTION SERVICE ENVELOPE ≈ 5%

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Not recommended	—	Rapid degradation; never use with oxidizers.	Parker O-ring Chemical Compatibility
EPDM Elastomer	Fair	60	Service below 35 %; swelling and embrittlement above.	Parker O-ring Chemical Compatibility
Viton (FKM) Elastomer	Poor	—	Use EPDM or PTFE for sealing	Solvay H₂O₂ Safety & Handling
PTFE Fluoropolymer	Excellent	100	Gaskets, lining; best-in-class	Solvay H₂O₂ Safety & Handling

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
PVDF Fluoropolymer	Excellent	80	Preferred fluoropolymer for piping	Solvay H2O2 Safety & Handling
PVDF (Kynar) Fluoropolymer	Excellent	100	Standard for high-purity peroxide service.	Solvay H2O2 Materials of Construction
Borosilicate Glass Glass Ceramic	Excellent	100	Inert to all oxidizers within normal service temperatures.	Cole-Parmer Chemical Compatibility
Concrete (untreated) Glass Ceramic	Not recommended	—	Reactive; line with HDPE/FRP	Solvay H2O2 Safety & Handling
304 stainless steel Metal	Good	40	May darken; acceptable for short-term storage	Solvay H2O2 Safety & Handling
304 Stainless Steel Metal	Fair	40	Surface oxidation at higher concentrations; passivate before service.	Cole-Parmer Chemical Compatibility
316 stainless steel Metal	Excellent	40	Passivated surfaces preferred	Solvay H2O2 Safety & Handling
316L stainless steel Metal	Excellent	60	Welds require post-weld passivation	Solvay H2O2 Safety & Handling
316L Stainless Steel Metal	Good	60	Passive layer stable; avoid prolonged service above 60 °C.	Solvay H2O2 Materials of Construction
Aluminium 1100/3003 Metal	Good	40	Limit to dilute service	Solvay H2O2 Safety & Handling
Brass Metal	Not recommended	—	Copper-induced decomposition	Solvay H2O2 Safety & Handling

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Carbon steel Metal	Not recommen ded	—	Catalytic decomposition; not for any service	Solvay H2O2 Safety & Handling
Carbon Steel Metal	Not recommen ded	—	Rapid corrosion; never use with oxidizers.	Cole-Parmer Chemical Compatibility
Copper Metal	Not recommen ded	—	Catalytic decomposition; severe	Solvay H2O2 Safety & Handling
CPVC Thermoplastic	Good	60	Acceptable to 60 °C	Solvay H2O2 Safety & Handling
HDPE Thermoplastic	Good	50	Concentrations ≤ 50%; vented containers only	Solvay H2O2 Safety & Handling
Polypropylene Thermoplastic	Good	25	Service below 35 % at ambient; avoid above 25 °C.	Cole-Parmer Chemical Compatibility
PVC Thermoplastic	Fair	40	Embrittlement risk above 40 °C	Solvay H2O2 Safety & Handling

Ratings reflect the service envelope (concentration × temperature) shown. Always confirm against your specific duty cycle and contact-time before equipment selection. The most cautious rating across overlapping references is shown.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

Not regulated **Adjudicated**

PACKING GROUP

Not regulated **Adjudicated**

HAZARD CLASS

Not regulated **Adjudicated**

PROPER SHIPPING NAME

Not regulated **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Warning **Adjudicated**

H-CODES (HAZARD STATEMENTS)

H319 **Adjudicated**

P-CODES (PRECAUTIONARY STATEMENTS)

P264, P280, P305+P351+P338, P337+P313

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

1 ppm TWA **OSHA 29 CFR 1910.1000**

ACGIH TLV

— **unknown**

NIOSH REL

1 ppm TWA **NIOSH Pocket Guide**

NIOSH IDLH

75 ppm **NIOSH Pocket Guide**

Transport descriptions reflect 49 CFR 172.101 lookup at time of publication. Sourced data: ECHA CLP Annex VI for harmonised classifications, NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

Supplier Qualification Packet

One zipped download containing the TDS, SDS, latest lot COA (when available), and a fresh Letter of Continuing Guaranty for Hydrogen Peroxide 5% ACS Grade. Every file included is SHA-256 hashed and listed in a manifest your QA team can audit.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

HONEYWELL

SKU	GRADE	CONC.	MATCH	NOTES
95302	ACS	30%	Exact	Fluka brand, ACS grade

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
216763	ACS Reagent	30%	Exact	Stabilized; ACS Reagent

Cross-references are informational. Confirm against the manufacturer's current specification before substitution. Competitor trademarks are property of their respective owners.

APPLICATION GUIDANCE

Hydrogen Peroxide 5% ACS Grade (ACS Grade) is supplied for applications where controlled, selective oxidation is required. Grade selection drives the choice between bulk industrial oxidation, electronics/semiconductor cleaning, and pharmaceutical-grade disinfection.

- Pulp and textile bleaching
- Wastewater treatment and odor control
- Etching and surface cleaning (electronics-grade only)
- Disinfection and sterilization (food/pharma-grade only)
- Chemical synthesis and polymerization initiation

Materials of construction must be rated for the concentration and temperature in service. Avoid contact with reducing agents, transition metals, and organic combustibles.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, well-ventilated area, away from heat, sunlight, and combustibles. Vented containers only — pressure may develop from slow...

INCOMPATIBILITIES

Combustible materials, organic compounds, reducing agents, transition metal salts (catalytic decomposition), strong bases.

HANDLING PRECAUTIONS

Use PPE including face shield, chemical-resistant gloves, and apron. Avoid contamination — never return unused material to the original container....

SHELF LIFE

24 months from date of manufacture in sealed, original packaging

For full hazard, PPE, and emergency response guidance, refer to the Safety Data Sheet (SDS) for this product. The SDS controls in all cases where guidance differs.

REVISION HISTORY

Last reviewed 2026-07-17 by Andre Taki, DOT Hazmat Specialist.

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-07-17	Canonical data re-verified: 8 fields updated against independent vendor SDSs, CLP Annex VI, 49 CFR, and OSHA HazCom 2024 (GHS classification, hazard/precautionary codes, signal word, physical properties as applicable). - countryOfOrigin · canonical adjudication / reground (coa.data_provenance) - dotSubsidiaryHazardClass · canonical adjudication / reground (coa.data_provenance) - ghsClassification · canonical adjudication / reground (coa.data_provenance) - hazard_h_codes · canonical adjudication / reground (coa.data_provenance) - hazard_p_codes · canonical adjudication / reground (coa.data_provenance) - hsCode · canonical adjudication / reground (coa.data_provenance) - physicalProperties · canonical adjudication / reground (coa.data_provenance) - signalWord · canonical adjudication / reground (coa.data_provenance)	canonical_change
1.0	2026-05-20	Initial URL-first TDS published from canonical chemistry registry.	initial

This Technical Data Sheet is provided for technical reference. The Safety Data Sheet (SDS) controls in all cases where guidance differs. Values reflect Alliance Chemical canonical data at time of generation; subsequent revisions are recorded in the Revision History above.

ALLIANCE CHEMICAL

Order Hydrogen Peroxide 5% ACS Grade

Bulk & packaged sizes · COA/SDS ships with every order