

TECHNICAL DATA SHEET

Hydrogen Peroxide 12% ACS Grade

ACS Grade · 12%

CAS NUMBER	ALLIANCE CODE	GENERATED
7722-84-1	hydrogen-peroxide-12-acsg-grade	2026-08-31
REVISION	REVIEWED	
1.5	2026-07-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Hydrogen Peroxide 12% ACS Grade	hydrogen-peroxide-12-acsg-grade
GRADE	CONCENTRATION
ACS Grade	12%
CAS NUMBER	FORMULA
7722-84-1 PubChem	H2O2 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
34.015 PubChem	solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (H2O2)	11.5 – 12.5 vol%	12.0 %	—	Commercial practice
Titrateable acid	0.00024 meq/g	0.00008 meq/g	—	Derived by dilution
Ammonium (NH4)	2 ppm	0.12 ppm	—	Derived by dilution

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Chloride (Cl)	≤0.8 ppm	0.16 ppm	—	Derived by dilution
Heavy Metals (as Pb)	≤0.00004 %	0.040 ppm	—	Derived by dilution
Iron (Fe)	≤0.00002 %	0.016 ppm	—	Derived by dilution
Nitrate (NO ₃)	≤0.00008 %	0.080 ppm	—	Derived by dilution
Phosphate (PO ₄)	≤0.00008 %	0.20 ppm	—	Derived by dilution
Residue after evaporation	0.0008 % max	0.00020 %	—	Derived by dilution
Sulfate (SO ₄)	≤0.0002 %	0.40 ppm	—	Derived by dilution
Identification	Passes test	Passes test	Colorimetric - titanium(IV) sulfate / decolorization of acidified KMnO ₄	Interpreted

Specification values are guaranteed limits. Typical values are representative of production lots and are not guaranteed. Lot-specific certificates of analysis ship with every order.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE ACS Grade	12%	—	current
ACS Grade	30%	—	hydrogen-peroxide-30-accs-grade

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
ACS Grade	25%	—	hydrogen-peroxide-25-acs-grade
Technical Grade	25%	—	hydrogen-peroxide-25-technical-grade
ACS Grade	15%	—	hydrogen-peroxide-15-acs-grade
Technical Grade	15%	—	hydrogen-peroxide-15-technical-grade
ACS Grade	10%	—	hydrogen-peroxide-10-acs-grade
Technical Grade	10%	—	hydrogen-peroxide-10-technical-grade
ACS Grade	6%	—	hydrogen-peroxide-6-acs-grade
Technical Grade	6%	—	hydrogen-peroxide-6-technical-grade
ACS Grade	5%	—	hydrogen-peroxide-5-acs-grade
Technical Grade	5%	—	hydrogen-peroxide-5-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.

PROPERTY	VALUE	SOURCE
Form	Liquid	Published reference
Color	10 max APHA	Derived by dilution
Odor	... Slightly sharp odor ...	Published reference
pH	Weak acid; H ₂ O ₂ concn wt% = 35, 50, 70, 90; corresponding true pH: 4.6, 4.3, 4.4, 5.1	Published reference
Specific Gravity (20 °C)	1.035 – 1.045	Interpreted
Density	1.04 (12% w/w aqueous solution, 20 °C)	Published reference
Boiling Point	Not characterized for the 12% solution	Published reference
Melting Point	Not characterized for the 12% solution	Published reference
Flash Point	54	Published reference
Vapor Pressure	1 mmHg at 59.5 °F (NTP, 1992)	Published reference
Solubility (water)	greater than or equal to 100 mg/mL at 72 °F (NTP, 1992)	Published reference

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 ≈ 12%

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	200	Universal compatibility; preferred lining material.	Cole-Parmer Chemical Compatibility
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	Fair	40	Surface oxidation at higher concentrations; passivate before service.	Cole-Parmer Chemical Compatibility
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

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Brass Metal	Not recommen ded	—	Copper-induced decomposition	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	25	Good below 25 °C; reaction with peroxides accelerates at higher T.	Cole-Parmer Chemical Compatibility
Polypropylene Thermoplastic	Good	25	Service below 35 °C 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

UN2984 [Manual review](#)

PACKING GROUP

III [Adjudicated](#)

HAZARD CLASS

5.1 [Adjudicated](#)

PROPER SHIPPING NAME

Hydrogen peroxide, aqueous solutions with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary)

[Adjudicated](#)

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger [Adjudicated](#)

H-CODES (HAZARD STATEMENTS)

H272, H302, H318 [Adjudicated](#)

P-CODES (PRECAUTIONARY STATEMENTS)

P210, P220, P264, P270, P280, P301+P312, P305+P351+P338, P310, P330, P370+P378, P501

[Adjudicated](#)

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

1 ppm TWA [OSHA 29 CFR 1910.1000](#)

ACGIH TLV

— [no canonical](#)

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.

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.

APPLICATIONS

Disinfecting surfaces and textiles [laballey.com](#)

Disinfecting hard surfaces such as tile, countertops, glass and metals [laballey.com](#)

Applications are drawn from published manufacturer and supplier documentation; each is sourced. Suitability for a specific use is the buyer's to confirm.

STORAGE & HANDLING

RECOMMENDED STORAGE

Cool, well-ventilated area, away from heat, sunlight, and combustibles. Vented containers only — pressure may develop from slow decomposition. Original sealed containers; segregate from organics, metals (especially copper, iron, manganese), and reducing agents. Class-level guidance — not product-specific; the SDS controls.

INCOMPATIBILITIES

Combustible materials, organic compounds, reducing agents, transition metal salts (catalytic decomposition), strong bases. Class-level guidance — not product-specific; the SDS controls.

HANDLING PRECAUTIONS

Use PPE including face shield, chemical-resistant gloves, and apron. Avoid contamination — never return unused material to the original container. Ground all transfer equipment. Class-level guidance — not product-specific; the SDS controls.

SHELF LIFE

Consult Technical Services for product-specific shelf life

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.

PACKAGING & LOGISTICS

SHIPPING DESCRIPTION (US DOT)

UN2984, Hydrogen peroxide, aqueous solutions with not less than 8 percent but less than 20 percent hydrogen peroxide (stabilized as necessary), 5.1, PG III

Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS 70	PLACARD Oxidizer	PACKING GROUP PG III
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REVISION HISTORY

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

VERSION	DATE	CHANGE	TRIGGER
1.5	2026-08-04	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. - unNumber · canonical change (coa.data_provenance / adjudication) - hazardClass · canonical change (coa.data_provenance / adjudication) - packingGroup · canonical change (coa.data_provenance / adjudication)	canonical_change
1.4	2026-07-22	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication)	canonical_change
1.3	2026-07-21	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. - ghsClassification · canonical change (coa.data_provenance / adjudication) - hazard_h_codes · canonical change (coa.data_provenance / adjudication) - hazard_p_codes · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-07-17	Canonical data re-verified: 6 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) - 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)	canonical_change
1.2	2026-07-17	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. dotProperShippingName · canonical change (coa.data_provenance / adjudication)	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.