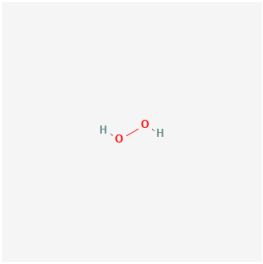
Technical Data Sheet

Hydrogen Peroxide 25% ACS Grade

ACS Grade · 25%

Alliance Code	Revised	Revision
hydrogen-peroxide-25-acs-grade	2026-10-20	1.8

CAS number 7722-84-1	UN number UN2014	Hazard class · packing group 5.1 · PG II
 Structure · PubChem	Grade ACS Grade · 25%	Signal word **Danger**

Hazards

Oxidizer | Corrosive | Irritant / harmful | H272 H302 H314 H332 H335

Proper shipping name

Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary)

IDENTITY & COMPOSITION

PRODUCT NAME
Hydrogen Peroxide 25% ACS Grade

ALLIANCE CODE
hydrogen-peroxide-25-acs-grade

GRADE
ACS Grade

CONCENTRATION
25% w/w

CAS NUMBER
7722-84-1 PubChem

FORMULA
H2O2 PubChem

PRODUCT TYPE
Solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay	24.5 - 25.5 % w/w	—	—	Interpreted
Identification	Passes test	—	Colorimetric - titanium(IV) sulfate / decolorization of acidified KMnO4	Interpreted
Titrable Acid	0.0005 meq/g max	—	—	Interpreted
Ammonium (NH4)	0.00042 % max	—	—	Interpreted
Chloride (Cl)	1.7 ppm max	—	—	Interpreted
Heavy Metals (as Pb)	0.000084 % max	—	—	Interpreted
Iron (Fe)	0.000042 % max	—	—	Interpreted
Nitrate (NO3)	0.00017 % max	—	—	Interpreted
Phosphate (PO4)	0.00018 % max	—	—	Interpreted
Residue after Evaporation	0.0017 % max	—	—	Interpreted
Sulfate (SO4)	0.00043 % max	—	—	Interpreted
Color (APHA)	≤10	—	—	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Composition	25 % hydrogen peroxide in deionized water, by weight	—	By formulation; batch weights (scale ticket)	Interpreted

Values are reproduced from the current product reference. Source labels do not by themselves establish a supplier guarantee or a test result for your lot. Confirm applicable acceptance limits and request lot-specific documentation.

AVAILABLE GRADES SAME CAS, ALTERNATE GRADES AND CONCENTRATIONS

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
THIS GRADE ACS Grade	25%	—	current
—	35%	—	SHOPIFY-8019789545514
ACS Grade	30%	—	hydrogen-peroxide-30-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	12%	—	hydrogen-peroxide-12-acs-grade
Technical Grade	12%	—	hydrogen-peroxide-12-technical-grade
ACS Grade	10%	—	hydrogen-peroxide-10-acs-grade
Technical Grade	10%	—	hydrogen-peroxide-10-technical-grade
Technical Grade	6%	—	hydrogen-peroxide-6-technical-grade
ACS Grade	5%	—	hydrogen-peroxide-5-acs-grade
Technical Grade	3%	—	hydrogen-peroxide-3-technical-grade

Typical assay for each grade is the average of its recent lots. Confirm a grade meets your specification before substituting it.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Clear, colorless liquid	Adjudicated
Form	Liquid	Published reference
Odor	Odorless to faintly sharp	Adjudicated
pH	3–4	Adjudicated
Specific Gravity	1.093 at 20/20 °C (water = 1)	Adjudicated
Density	1.0910 g/cm^3 at 20 °C	Adjudicated
Boiling Point	Approx. 104 °C (219 °F) (aqueous solution)	Adjudicated
Melting Point	Approx. −23 °C (−9 °F), freezing point (aqueous solution)	Adjudicated
Flash Point	Not applicable	Adjudicated
Vapor Pressure	13.5 mmHg at 20 °C	Adjudicated
Vapor Density	1.1 (air = 1)	Adjudicated
Solubility (water)	Completely miscible with water	Adjudicated

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 ≈ 25%

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Not recommended	—	Rapid degradation; never use with oxidizers.	Parker O-ring Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
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
Brass Metal	Not recommended	—	Copper-induced decomposition	Solvay H2O2 Safety & Handling
Carbon Steel Metal	Not recommended	—	Rapid corrosion; never use with oxidizers.	Cole-Parmer Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Copper Metal	Not recommended	—	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 % 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

UN2014 49 CFR 172.101

HAZARD CLASS

5.1 Adjudicated

PACKING GROUP

II Adjudicated

PROPER SHIPPING NAME

Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary)

Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD

Danger Adjudicated

H-CODES (HAZARD STATEMENTS)

H272, H302, H314, H332, H335 Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)

P210, P220, P260, P261, P264, P270, P271, P280, P301+P312, P301+P330+P331, P303+P361+P353, P304+P340, P305+P351+P338, P310, P312, P321, P330, P363, P370+P378, P403+P233, P405, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

1 ppm TWA OSHA 29 CFR 1910.1000

ACGIH TLV

1 ppm TWA (A3: confirmed animal carcinogen with unknown relevance to humans)

Adjudicated

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: NIOSH Pocket Guide for REL/IDLH, OSHA Z-Tables for PEL. Always verify against the latest regulatory text before shipment-critical decisions.

HEALTH & FIRE HAZARD

ACUTE TOXICOLOGY

LD_{50} ORAL (RAT)

910 mg/kg (20–60% aqueous solution)

Adjudicated

LD_{50} DERMAL (RABBIT)

2,000–9,200 mg/kg (hydrogen peroxide)

Adjudicated

LC_{50} INHALATION (RAT, 4 H)

2 mg/L (2,000 mg/m^3) (hydrogen peroxide)

Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

HONEYWELL

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

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
216763	ACS Reagent	30%	Unverified candidate	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

Store in the original vented container, cool and out of sunlight, away from combustibles, organics and metals. Never return material to the container. Use only clean, compatible equipment (high-purity aluminum, stainless steel, HDPE, glass).

Adjudicated

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.

INCOMPATIBILITIES

Combustible and organic materials (paper, wood, oils, solvents such as acetone and alcohols); reducing agents; metals and metal salts, especially iron, copper, brass and lead (catalyze violent decomposition); cyanides and sulfides; strong acids and bases; ammonia.

Adjudicated

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)

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UN2014, Hydrogen peroxide, aqueous solutions with not less than 20 percent but not more than 40 percent hydrogen peroxide (stabilized as necessary), 5.1, PG II
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Sourced from 49 CFR 172.101. Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS	PLACARD	PACKING GROUP
65	Oxidizer	PG II

REVISION HISTORY

Last reviewed 2026-10-20 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.8	2026-10-20	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • density · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.7	2026-10-08	Canonical data updated: 21 fields changed via the provenance/adjudication pipeline. • synonyms · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication) • restrictions_on_use · canonical change (coa.data_provenance / adjudication) • odor · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · canonical change (coa.data_provenance / adjudication) • oel_other · canonical change (coa.data_provenance / adjudication) • incompatible_materials · canonical change (coa.data_provenance / adjudication) • conditions_to_avoid · canonical change (coa.data_provenance / adjudication) • hazardous_decomposition_products · canonical change (coa.data_provenance / adjudication) • storage_precautions · canonical change (coa.data_provenance / adjudication) • cercla_rq · canonical change (coa.data_provenance / adjudication) • rcra_waste_codes · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • decompositionTemperature · canonical change (coa.data_provenance / adjudication) • vaporDensity · canonical change (coa.data_provenance / adjudication) • pH · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication)	canonical_change
1.6	2026-09-30	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change
1.5	2026-08-05	Canonical data updated: 1 field changed via the provenance/adjudication pipeline. • unNumber · 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

VERSION	DATE	CHANGE	TRIGGER
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
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
1.1	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
1.0	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.