

TECHNICAL DATA SHEET

Ammonium Hydroxide 5% ACS Grade

ACS · 5%

CAS NUMBER	ALLIANCE CODE	GENERATED
1336-21-6	ammonium-hydroxide-5-ac-s-grade	2026-09-01
REVISION	REVIEWED	
1.2	2026-07-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Ammonium Hydroxide 5% ACS Grade	ammonium-hydroxide-5-ac-s-grade
GRADE	CONCENTRATION
ACS	5%
CAS NUMBER	FORMULA
1336-21-6 PubChem	H5NO PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
35.046 PubChem	solution

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (NH3)	4.7 – 5.3 %	5.0 %	Titration	Commercial practice
Carbon dioxide (CO2)	Max 0.0003%	0.00007 %	—	Derived by dilution
Chloride (Cl)	Max 0.09 ppm	0.026 ppm	—	Derived by dilution

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Heavy metals (as Pb)	Max 0.09 ppm	0.009 ppm	—	Derived by dilution
Nitrate (NO ₃)	Max 0.34 ppm	0.05 ppm	—	Derived by dilution
Substances reducing permanganate	To pass Test	Passes test	—	ACS Reagent Chemicals
Phosphate (PO ₄)	Max 0.34 ppm	0.017 ppm	—	Derived by dilution
Residue after ignition	0.0003 % Maximum	0.00005 %	—	Derived by dilution
Sulfur compounds (as SO ₄)	Max 0.34 ppm	0.035 ppm	—	Derived by dilution
Iron (Fe)	Max 0.035 ppm	0.004 ppm	—	Derived by dilution

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	5%	—	current
ACS Grade	29%	—	ammonium-hydroxide-29-ac-s-grade
Technical Grade	29%	—	ammonium-hydroxide-29-technical-grade
ACS	20%	—	ammonium-hydroxide-20-ac-s-grade

GRADE	CONCENTRATION	TYPICAL ASSAY	SKU
Technical	20%	—	ammonium-hydroxide-20-technical-grade
ACS	15%	—	ammonium-hydroxide-15-acs-grade
Technical	15%	—	ammonium-hydroxide-15-technical-grade
ACS	10%	—	ammonium-hydroxide-10-acs-grade
Technical	10%	—	ammonium-hydroxide-10-technical-grade
Technical	5%	—	ammonium-hydroxide-5-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

PROPERTY	VALUE	SOURCE
Color	Clear, Colorless	ACS Reagent Chemicals
Specific Gravity (20 °C)	0.974 – 0.980	Interpreted

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	CONDITIONS	SOURCE
copper and copper alloys	Not recommended	—	tannerind.com
aluminum alloys	Not recommended	—	tannerind.com

MATERIAL	RATING	CONDITIONS	SOURCE
galvanized surfaces	Not recommended	—	tannerind.com
copper, copper alloys, aluminum alloys, and galvanized surfaces	Not recommended	—	tannerind.com

Compatibility is drawn from published manufacturer and supplier documentation for this product; each rating is sourced. Confirm against your specific duty cycle before equipment selection.

REGULATORY & TRANSPORT

DOT / 49 CFR

UN NUMBER

Not regulated **Adjudicated**

HAZARD CLASS

Not regulated **Adjudicated**

PACKING GROUP

Not regulated **Adjudicated**

PROPER SHIPPING NAME

Not regulated **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger **Adjudicated**

H-CODES (HAZARD STATEMENTS)

H314, H335, H400 **Adjudicated**

P-CODES (PRECAUTIONARY STATEMENTS)

P234, P260, P261, P264, P271, P273, P280, P301+P330+P331, P303+P361+P353, P304+P340, P305+P351+P338, P310, P321, P363, P391, P403+P233, P405, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

50 ppm TWA **OSHA 29 CFR 1910.1000**

ACGIH TLV

— **no canonical**

NIOSH REL

25 ppm TWA / 35 ppm STEL

NIOSH IDLH

300 ppm **NIOSH Pocket Guide**

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.

APPLICATIONS

Acid neutralization tannerind.com

Used in the chemical and petroleum industries and in agriculture, resins, polymers, acid neutralization, water treatment, cogeneration NOx scrubbing and explosives

tannerind.com

Feedstock for preparing other ammonium compounds such as urea, ammonium carbonate and ammonium sulfate

laballey.com

Laboratory solvent, pharmaceutical manufacturing, polymer manufacturing, household cleaning reagent, and food additive / acidity regulator

laballey.com

Buffers, ceramics, collagen sausage casing, detergents, fertilizer, hair bleaching and hair colorants, I&I cleaners, ink, photographic chemistry, rayon, refrigeration, selective catalytic reduction (SCR), textiles and window cleaner

chemceed.com

Reagent for compounding analytical test solutions uspbpep.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 a closed container and keep cool; otherwise ammonia gas comes out of solution and the material strength is reduced.

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INCOMPATIBILITIES

copper, copper alloys, aluminum alloys, galvanized surfaces

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HANDLING PRECAUTIONS

Use standard chemical PPE — splash goggles, gloves, lab coat. Refer to SDS for hazard-specific PPE requirements.

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)

Not regulated for transport.

Confirm against shipping documents and carrier requirements before tender.

NMFC CLASS
55

REVISION HISTORY

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

VERSION	DATE	CHANGE	TRIGGER
1.2	2026-08-27	Canonical data updated: 3 fields changed via the provenance/adjudication pipeline. - oel_niosh_rel · canonical change (coa.data_provenance / adjudication) - oel_idlh · canonical change (coa.data_provenance / adjudication) - oel_oshapel · canonical change (coa.data_provenance / adjudication)	canonical_change
1.1	2026-07-17	Canonical data re-verified: 7 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) - 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.