

TECHNICAL DATA SHEET

Ammonium Bifluoride Flakes ACS Grade

ACS

CAS NUMBER	ALLIANCE CODE	GENERATED
1341-49-7	ammonium-bifluoride-flakes-acs-grade	2026-08-31
REVISION	REVIEWED	
1.3	2026-07-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Ammonium Bifluoride Flakes ACS Grade	ammonium-bifluoride-flakes-acs-grade
GRADE	CONCENTRATION
ACS	—
CAS NUMBER	FORMULA
1341-49-7 PubChem	F2H5N PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
57.044 PubChem	pure_substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (NH4HF2)	Min. 98.5 %	99.3 %	—	Supplier specification
Aluminium (Al)	Max. 5 ppm	0.3 ppm	—	Supplier specification
Silicon (as (NH4)2SiF6)	Max. 500 ppm	40 ppm	—	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Barium (Ba)	Max. 5 ppm	0.08 ppm	—	Supplier specification
Bismuth (Bi)	Max. 5 ppm	0.03 ppm	—	Supplier specification
Cadmium (Cd)	Max. 5 ppm	0.04 ppm	—	Supplier specification
Calcium (Ca)	Max. 10 ppm	1.5 ppm	—	Supplier specification
Chloride (Cl)	Max. 50 ppm	6 ppm	—	Supplier specification
Chromium (Cr)	Max. 50 ppm	1.0 ppm	—	Supplier specification
Cobalt (Co)	Max. 5 ppm	0.03 ppm	—	Supplier specification
Copper (Cu)	Max. 5 ppm	0.3 ppm	—	Supplier specification
Heavy Metals (as Pb)	<= 0.002 %	0.0002 %	—	Supplier specification
Identity	complying	Passes test	Infrared spectroscopy (IR)	Supplier specification
Insoluble Matter	<= 0.02 %	0.003 %	—	Supplier specification
Iron (Fe)	Max. 100 ppm	2 ppm	—	Supplier specification
Lead (Pb)	Max. 5 ppm	0.1 ppm	—	Supplier specification
Lithium (Li)	Max. 5 ppm	0.06 ppm	—	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Magnesium (Mg)	Max. 5 ppm	0.3 ppm	—	Supplier specification
Manganese (Mn)	Max. 5 ppm	0.06 ppm	—	Supplier specification
Molybdenum (Mo)	Max. 5 ppm	0.2 ppm	—	Supplier specification
Nickel (Ni)	Max. 100 ppm	0.8 ppm	—	Supplier specification
Potassium (K)	Max. 50 ppm	0.8 ppm	—	Supplier specification
Silver (Ag)	Max. 5 ppm	0.03 ppm	—	Supplier specification
Sodium (Na)	Max. 50 ppm	4 ppm	—	Supplier specification
Strontium (Sr)	Max. 5 ppm	0.07 ppm	—	Supplier specification
Sulfite (SO ₃)	Max. 50 ppm	2 ppm	—	Supplier specification
Thallium (Tl)	Max. 5 ppm	0.02 ppm	—	Supplier specification
Total sulfur (as SO ₄)	Max. 100 ppm	12 ppm	—	Supplier specification
Moisture (as H ₂ O)	<= 0.4 %	0.03 %	—	Supplier specification
Zinc (Zn)	Max. 5 ppm	0.2 ppm	—	Supplier specification
Silica (SiO ₂)	Max. 50 ppm	13 ppm	ICP-OES	Interpreted
Antimony (Sb)	Max. 5 ppm	0.2 ppm	ICP-OES	Interpreted

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Tin (Sn)	Max. 5 ppm	0.15 ppm	ICP-OES	Interpreted
Titanium (Ti)	Max. 5 ppm	0.1 ppm	ICP-OES	Interpreted
Vanadium (V)	Max. 5 ppm	0.04 ppm	ICP-OES	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	—	—	current
Technical	—	—	ammonium-bifluoride-flakes

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
Odor	Odorless	Published reference
pH	4.0 - 6.5	Supplier specification
Density	1.5 at 68 °F (USCG, 1999) - Denser than water; will sink	Published reference
Boiling Point	463.1 °F at 760 mmHg (Decomposes at 446 °F) (USCG, 1999)	Published reference
Melting Point	258 °F (USCG, 1999)	Published reference

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	CONDITIONS	SOURCE
glass / silicate-containing materials	Not recommended	—	lab.solstice.com
glass	Not recommended	—	lab.solstice.com
silicate-containing materials	Not recommended	—	lab.solstice.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

UN1727 [Adjudicated](#)

PACKING GROUP

II [Adjudicated](#)

HAZARD CLASS

8 [Adjudicated](#)

PROPER SHIPPING NAME

Ammonium hydrogendifluoride, solid

[Adjudicated](#)

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Danger [Adjudicated](#)

H-CODES (HAZARD STATEMENTS)

H301, H311, H314, H331 [Adjudicated](#)

P-CODES (PRECAUTIONARY STATEMENTS)

P260, P264, P270, P271, P280, P301+P310,
P302+P352, P304+P340, P305+P351+P338,
P310, P321, P330, P362, P363, P403+P233,
P405, P501

[Adjudicated](#)

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— [no canonical](#)

ACGIH TLV

— [no canonical](#)

NIOSH REL

— [no canonical](#)

NIOSH IDLH

— [no canonical](#)

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

Fluoride source for etching, surface treatment and chemical processing where controlled fluoride activity is required

labproinc.com

Laboratory, research or manufacturing use (reagent-grade flake certificate of analysis)

digitalassets.avantorsciences.com

Etching agent — the material is catalogued under the trade synonym "etching powder"

lab.solstice.com

Laboratory, research, or manufacturing use. digitalassets.avantorsciences.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

Storage Temperature Ambient

lab.solstice.com

HANDLING PRECAUTIONS

Use in ventilation or with respiratory protection — vapour is the primary exposure. Chemical splash goggles and gloves. Open and transfer cool; pressure can build in warm sealed containers. Neutralization with acid is exothermic.

Class-level guidance — not product-specific; the SDS controls.

INCOMPATIBILITIES

glass and silicate-containing materials, strong acids

lab.solstice.com

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)

UN1727, Ammonium hydrogendifluoride, solid, 8, PG II

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

NMFC CLASS
60

PLACARD
Corrosive

PACKING GROUP
PG II

REVISION HISTORY

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

VERSION	DATE	CHANGE	TRIGGER
1.3	2026-08-05	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • packingGroup · canonical change (coa.data_provenance / adjudication) • unNumber · canonical change (coa.data_provenance / adjudication)	canonical_change
1.2	2026-07-22	Canonical data updated: 2 fields changed via the provenance/adjudication pipeline. • dotSubsidiaryHazardClass · canonical change (coa.data_provenance / adjudication) • 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.