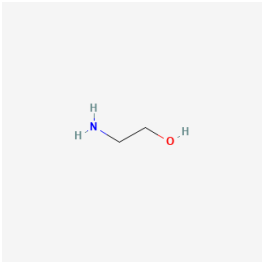
Technical Data Sheet

Monoethanolamine (MEA) ACS Grade

ACS Grade

Alliance Code	Revised	Revision
monoethanolamine-mea-acs-grade	2026-10-08	1.6

CAS number 141-43-5	UN number UN2491	Hazard class · packing group 8 · PG III
 Structure · PubChem	Grade ACS Grade	Signal word **Danger**
Hazards Corrosive · Irritant / harmful · H227 H302 H312 H314 H332 H335		
Proper shipping name Ethanolamine		

IDENTITY & COMPOSITION

PRODUCT NAME
Monoethanolamine (MEA) ACS Grade

ALLIANCE CODE
monoethanolamine-mea-acs-grade

GRADE
ACS Grade

CONCENTRATION
—

CAS NUMBER
141-43-5 PubChem

FORMULA
C2H7NO PubChem

MOLECULAR WEIGHT
61.08 PubChem

PRODUCT TYPE
Pure substance

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (HOCH2CH2NH2)	min. 99.0 %	—	GC, corrected for water	Interpreted
Color (APHA)	15 (maximum limit)	—	—	Interpreted
Diethanolamine	0.3 %	—	G.C.	Interpreted
Ethanol	0.1 %	—	G.C.	Interpreted
Heavy Metals (as Pb)	max. 5 ppm	—	—	Interpreted
Identity	passes test	—	IR	Interpreted
Iron (Fe)	max. 5 ppm	—	—	Interpreted
Non-volatile matter (residue after evaporation)	0.2 %	—	—	Interpreted
Triethanolamine	0.1 %	—	G.C.	Interpreted
Water (H2O)	max. 0.30 %	—	coulometry	Interpreted
Distillation range (95% between)	168 °C - 172 °C	—	ASTM D1078	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	—	—	current
Technical	—	—	monoethanolamine-mea

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	Ammonia-like, fishy	Adjudicated
pH	12.1 (25% aqueous solution)	Adjudicated
Specific Gravity	1.016–1.020 at 20 °C (water at 4 °C = 1)	Adjudicated
Density	1.016-1.020	Interpreted
Boiling Point	170–172 °C (338–342 °F)	Adjudicated
Melting Point	10–11 °C (50–52 °F)	Adjudicated
Flash Point	85–93 °C (185–199 °F), closed cup	Adjudicated
Vapor Pressure	About 0.4 mmHg (0.3–0.5 hPa) at 20 °C	Adjudicated
Vapor Density	2.1 (air = 1)	Adjudicated
Solubility (water)	Completely miscible with water	Adjudicated
Refractive Index (nD 20)	1.4530 - 1.4550	Interpreted
Viscosity	About 24 mPa·s at 20 °C	Adjudicated

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	CONDITIONS	SOURCE
Glass (packaging container)	Compatible	ACS reagent product as packaged, min. 99.0 % assay; no compatibility limit stated	mgscientific.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
UN2491 Adjudicated

HAZARD CLASS
8 Adjudicated

PACKING GROUP
III Adjudicated

PROPER SHIPPING NAME
Ethanolamine Adjudicated

GHS / OSHA HCS 2024

SIGNAL WORD
Danger Adjudicated

H-CODES (HAZARD STATEMENTS)
H227, H302, H312, H314, H332, H335

Adjudicated

P-CODES (PRECAUTIONARY STATEMENTS)
P210, P260, P261, P264, P270, P271, P280, P301+P312, P301+P330+P331, P302+P352, P303+P361+P353, P304+P340, P305+P351+P338, P310, P313, P321, P330, P362, P363, P370+P378, P403+P233, P403+P235, P405, P501

Adjudicated

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)
3 ppm TWA OSHA 29 CFR 1910.1000

ACGIH TLV
3 ppm TWA; 6 ppm STEL Adjudicated

NIOSH REL
3 ppm (8 mg/m^3) TWA; 6 ppm (15 mg/m^3) STEL

Adjudicated

NIOSH IDLH
30 ppm Adjudicated

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)

1,089–1,720 mg/kg (rat)

Adjudicated

LD_{50} DERMAL (RABBIT)

1,000–2,504 mg/kg

Adjudicated

LC_{50} INHALATION (RAT, 4 H)

1.49 mg/L (aerosol, 4 h)

Adjudicated

Acute toxicology values from SDS Section 11 or NIOSH RTECS.

APPLICATIONS

Analytical laboratory reagent (ACS grade, for analysis) itwreagents.com

Reagent for testing USP/NF monographs; laboratory, research or manufacturing use mgscientific.com

Feed stock for pharmaceuticals labdepotinc.com

Feed stock for detergents, chemical intermediates and corrosion inhibitors labdepotinc.com

Sweetening natural gas and coal gas; used as soap or amides in heavy-duty detergents nouryon.com

Scrubbing acidic gases (H2S, CO2) amines.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

Keep tightly closed in steel or stainless-steel containers (never copper, brass, zinc or aluminum), in a cool, ventilated area away from acids, oxidizers, nitrites and ignition sources. Protect from freezing (solidifies at about 10 °C).

Adjudicated

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

Strong acids and oxidizers; nitrites and other nitrosating agents (form N-nitrosamines); copper, brass, zinc, aluminum and galvanized metal (corroded); halogenated organic compounds.

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)

```
UN2491, Ethanolamine, 8, PG III
```

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

NMFC CLASS	PLACARD	PACKING GROUP
65	Corrosive	PG III

REVISION HISTORY

Last reviewed 2026-10-08 by Andre Taki, Chief Commercial Officer, DOT Hazmat–certified (49 CFR 172.704).

VERSION	DATE	CHANGE	TRIGGER
1.6	2026-10-08	Canonical data updated: 28 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) • synonyms · canonical change (coa.data_provenance / adjudication) • restrictions_on_use · canonical change (coa.data_provenance / adjudication) • odor · canonical change (coa.data_provenance / adjudication) • odorThreshold · canonical change (coa.data_provenance / adjudication) • pH · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • vaporPressure · canonical change (coa.data_provenance / adjudication) • vaporDensity · canonical change (coa.data_provenance / adjudication) • solubility · canonical change (coa.data_provenance / adjudication) • viscosity · canonical change (coa.data_provenance / adjudication) • partitionCoefficient · canonical change (coa.data_provenance / adjudication) • explosiveLimits · canonical change (coa.data_provenance / adjudication) • oel_acgih_tlv · canonical change (coa.data_provenance / adjudication) • oel_niosh_rel · canonical change (coa.data_provenance / adjudication) • oel_idlh · 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) • rcra_waste_codes · canonical change (coa.data_provenance / adjudication) • cercla_rq · canonical change (coa.data_provenance / adjudication) • recommended_use · canonical change (coa.data_provenance / adjudication) • specificGravity · canonical change (coa.data_provenance / adjudication)	canonical_change
1.5	2026-10-05	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_osha_pel · canonical change (coa.data_provenance / adjudication)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
1.4	2026-09-30	Canonical data updated: 4 fields changed via the provenance/adjudication pipeline. • boilingPoint · canonical change (coa.data_provenance / adjudication) • meltingPoint · canonical change (coa.data_provenance / adjudication) • flashPoint · canonical change (coa.data_provenance / adjudication) • appearance · canonical change (coa.data_provenance / adjudication)	canonical_change
1.3	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
1.2	2026-07-17	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
1.1	2026-07-17	Canonical data re-verified: 5 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)	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.