

TECHNICAL DATA SHEET

Calcium Chloride Technical Grade

Technical

CAS NUMBER	ALLIANCE CODE	GENERATED
10043-52-4	calcium-chloride	2026-08-31
REVISION	REVIEWED	
1.1	2026-07-17 · Andre Taki	

IDENTITY & COMPOSITION

PRODUCT NAME	ALLIANCE CODE
Calcium Chloride Technical Grade	calcium-chloride
GRADE	CONCENTRATION
Technical	—
CAS NUMBER	FORMULA
10043-52-4 PubChem	CaCl2 PubChem
MOLECULAR WEIGHT	PRODUCT TYPE
110.98 PubChem	pure_substance
IUPAC NAME	INCHI-KEY
calcium dichloride PubChem	UXVMQQNJUSDDNG-UHFFFA0YSA-L PubChem
SMILES	
[Ca+2].[Cl-].[Cl-] PubChem	

SPECIFICATIONS

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Assay (CaCl2)	94 wt. % min.	96.0 wt. %	—	Supplier specification
Calcium carbonate	0.25 % max	0.06 %	—	Supplier specification

TEST	SPECIFICATION	TYPICAL	METHOD	SOURCE
Calcium hydroxide	0.2 wt. % max. (active ingredient basis)	0.04 wt. %	—	Supplier specification
Total alkali chlorides (as NaCl)	6.0 wt. % max. (active ingredient basis)	1.2 wt. %	—	Supplier specification
Heavy metals (as Pb)	0.0050 % max	0.0002 %	—	Supplier specification
Iron	0.005 % max	0.0006 %	—	Supplier specification
Total magnesium (as MgCl ₂)	0.5 wt. % max. (active ingredient basis)	0.12 wt. %	—	Supplier specification
Sulfate	0.20 % max	0.03 %	—	Supplier specification
Water insolubles	≤0.15 %	0.02 %	—	Supplier specification
alkalinity	5 % max	0.09 %	—	Supplier specification
other impurities	1 % max	0.15 %	—	Supplier specification

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.

PHYSICAL & CHEMICAL PROPERTIES

PROPERTY	VALUE	SOURCE
Appearance	Calcium chloride is a white to off-white solid. Sinks and mixes with water. (USCG, 1999)	Published reference
Form	Solid	Published reference
Odor	ODORLESS	Published reference
pH	7 – 10	Supplier specification
Density	52 – 58 LB/FT3	Supplier specification
Boiling Point	1935 °C	Published reference
Melting Point	782 °C	Published reference
Flash Point	Not applicable	Published reference
Solubility (water)	0.745 g/mL (at 20 °C)	Published reference

MATERIALS OF CONSTRUCTION

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Buna-N (NBR) Elastomer	Good	60	Acceptable	Cole-Parmer Chemical Compatibility
EPDM Elastomer	Excellent	100	Standard for brine gaskets.	Parker O-ring Chemical Compatibility

MATERIAL	RATING	MAX T (°C)	NOTES	SOURCE
Viton (FKM) Elastomer	Excellent	100	Preferred elastomer	Cole-Parmer Chemical Compatibility
Borosilicate Glass Glass Ceramic	Excellent	100	Universally inert to salt solutions.	Cole-Parmer Chemical Compatibility
Concrete (sealed) Glass Ceramic	Good	—	Acceptable with epoxy coating	Cole-Parmer Chemical Compatibility
304 stainless steel Metal	Fair	25	Pitting in chloride-rich service	Cole-Parmer Chemical Compatibility
316L Stainless Steel Metal	Good	60	Watch for chloride pitting above 60 °C in chloride salts.	NACE Chloride Pitting Guidelines
Aluminium Metal	Poor	—	Pitting; not recommended for brine	Cole-Parmer Chemical Compatibility
Carbon steel Metal	Poor	—	Rapid rust in brine	Cole-Parmer Chemical Compatibility
FRP Thermoplastic	Excellent	60	Common bulk-storage	Cole-Parmer Chemical Compatibility
HDPE Thermoplastic	Excellent	60	Universal salt brine compatibility.	Cole-Parmer Chemical Compatibility
PP Thermoplastic	Excellent	80	Acceptable for hot brine	Cole-Parmer Chemical Compatibility
PVC Thermoplastic	Excellent	60	Standard for brine piping.	Cole-Parmer Chemical Compatibility

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

Not regulated **Adjudicated**

PACKING GROUP

Not regulated **Adjudicated**

HAZARD CLASS

Not regulated **Adjudicated**

PROPER SHIPPING NAME

Not regulated **Adjudicated**

GHS / OSHA HAZCOM 2012

SIGNAL WORD

Warning **Adjudicated**

P-CODES (PRECAUTIONARY STATEMENTS)

P264, P280, P305+P351+P338, P337+P313

Adjudicated

H-CODES (HAZARD STATEMENTS)

H319 **Adjudicated**

OCCUPATIONAL EXPOSURE LIMITS

OSHA PEL (29 CFR 1910.1000)

— **no canonical**

NIOSH REL

— **no canonical**

ACGIH TLV

— **no canonical**

NIOSH IDLH

— **no canonical**

REGIONAL CLASSIFICATIONS

EC NUMBER (EU EINECS)

233-140-8 **Web SDS consensus**

CALIFORNIA PROP 65

Not listed **Web SDS consensus**

TDG CLASSIFICATION (CANADA)

not regulated **Web SDS consensus**

REACH SVHC

Not listed **Web SDS consensus**

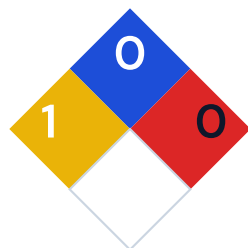
WGK WATER HAZARD (DE)

1 **Web SDS consensus**

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.

HEALTH & FIRE HAZARD

NFPA 704



- Health: 1 [Web SDS consensus](#)
- Fire: 0 [Web SDS consensus](#)
- Reactivity: 0 [Web SDS consensus](#)
- Specific: —

HMIS III

Health	1	Web SDS consensus
Flammability	0	Web SDS consensus
Physical Hazard	0	Web SDS consensus
PPE	A	Web SDS consensus

ACUTE TOXICOLOGY

LD₅₀ ORAL (RAT)
1000 mg/kg [Web SDS consensus](#)

LD₅₀ DERMAL (RABBIT)
2630 mg/kg [Web SDS consensus](#)

NFPA 704 ratings 0 (no hazard) – 4 (severe hazard) per NFPA 704 standard. HMIS III ratings 0 – 4 per the American Coatings Association. Acute toxicology values from SDS Section 11 or NIOSH RTECS.

CATALOG EQUIVALENTS CROSS-REFERENCE VS MAJOR CHEMICAL SUPPLIERS

SIGMA-ALDRICH

SKU	GRADE	CONC.	MATCH	NOTES
C1016	Anhydrous, powder, ≥97%	≥97%	Close	Sigma anhydrous powder; confirm Alliance grade variant.

THERMOFISHER

SKU	GRADE	CONC.	MATCH	NOTES
AC219340010	Anhydrous	≥96%	Close	Acros / Thermo anhydrous calcium chloride.

Cross-references are informational. Confirm against the manufacturer's current specification before substitution. Competitor trademarks are property of their respective owners.

APPLICATION GUIDANCE

Calcium Chloride Technical Grade (Technical) is supplied across multiple grades. Grade selection drives the appropriate end-use — food/pharma, technical, or specialty.

- Brine production and de-icing
- Concrete and construction (set acceleration, dust control)
- Food and beverage applications (food-grade only)
- Oilfield and drilling fluid additive
- Chemical manufacturing precursor

Often hygroscopic — store in sealed containers, control humidity. Hydrate form (anhydrous vs di/hexa-hydrate) affects mass-equivalent dosing.

STORAGE & HANDLING

RECOMMENDED STORAGE

Store so as to protect the product from moisture contact.

techdata.level7chemical.com

INCOMPATIBILITIES

moisture techdata.level7chemical.com

HANDLING PRECAUTIONS

Standard chemical PPE — dust mask and goggles for handling of fine grades. Avoid generating airborne dust.

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

SHELF LIFE

36 months techdata.level7chemical.com

Properly stored to protect from moisture contact (packaged product)

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
70

REVISION HISTORY

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

VERSION	DATE	CHANGE	TRIGGER
1.1	2026-07-17	Canonical data re-verified: 27 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) • ec_number · 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) • hmis_flammability · canonical adjudication / reground (coa.data_provenance) • hmis_health · canonical adjudication / reground (coa.data_provenance) • hmis_physical · canonical adjudication / reground (coa.data_provenance) • hmis_ppe · canonical adjudication / reground (coa.data_provenance) • hsCode · canonical adjudication / reground (coa.data_provenance) • inchi · canonical adjudication / reground (coa.data_provenance) • inchi_key · canonical adjudication / reground (coa.data_provenance) • iupac_name · canonical adjudication / reground (coa.data_provenance) • ld50_dermal_rabbit · canonical adjudication / reground (coa.data_provenance) • ld50_oral_rat · canonical adjudication / reground (coa.data_provenance) • nfpa_fire · canonical adjudication / reground (coa.data_provenance) • nfpa_health · canonical adjudication / reground (coa.data_provenance) • nfpa_reactivity · canonical adjudication / reground (coa.data_provenance) • pH · canonical adjudication / reground (coa.data_provenance) • prop_65_listed · canonical adjudication / reground (coa.data_provenance) • pubchem_cid · canonical adjudication / reground (coa.data_provenance) • reach_svhc_listed · canonical adjudication / reground (coa.data_provenance) • signalWord · canonical adjudication / reground (coa.data_provenance) • smiles · canonical adjudication / reground (coa.data_provenance) • tdg_classification · canonical adjudication / reground (coa.data_provenance)	canonical_change

VERSION	DATE	CHANGE	TRIGGER
		wgk_water_hazard · canonical adjudication / reground (coa.data_provenance)	
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.