

Potassium Chloride

Safety data sheet in the 16-section GHS format · CAS 7447-40-7

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1. Identification of the substance and of the supplier

Product name	Potassium Chloride
Synonyms	KCl, muriate of potash, MOP, potassium chloride powder, potash fertiliser
C.A.S. number	7447-40-7
Molecular formula	KCl
Grade supplied	MOP 60% K ₂ O min (FCO) / technical
Product group	Industrial Salts & Inorganics
Identified uses	Potassic fertiliser, Oilfield drilling, Chemical feedstock, Water treatment, Food & pharma, Glass, ceramics & metal
Supplier	Velora Chemicals Private Limited
Emergency contact	Medical, fire or spill emergency — call the emergency services first: 112 (all-India), 101 fire, 108 ambulance. Velora Chemicals Private Limited does not at present operate a 24-hour chemical emergency advice line, and this sheet does not pretend otherwise. Every consignment despatched by road carries an emergency information panel under rule 134 of the Central Motor Vehicles Rules 1989 bearing a number from which expert advice on this material can be obtained, and the producer's safety data sheet issued with the consignment carries the producer's own 24-hour number where one is operated. For product, grade and documentation queries in business hours: +91 99255 22674.

2. Hazards identification

GHS signal word	Not classified
Hazard classification	Not classified. There is no harmonised entry for potassium chloride in Annex VI to CLP. In the ECHA C&L Inventory 94.3 % of reports (825 of 875) state that the substance does not meet GHS hazard criteria, and the Nutrien Muriate of Potash SDS classifies it as 'Not classified' with no signal word and 'No known significant effects or critical hazards'. A small minority of notifiers self-classify irritant endpoints; those are supplier self-classifications, not harmonised.

3. Composition / information on ingredients

Substance	Potassium Chloride
C.A.S. number	7447-40-7
Molecular weight	74.55 g/mol
Composition	MOP 60% K ₂ O min (FCO) / technical

4. First-aid measures

Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes, holding the eyelids apart. Remove contact lenses if easily possible. Get medical attention if irritation persists.
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Skin contact	Flush contaminated skin with plenty of water. Remove contaminated clothing and footwear. Wash clothing before reuse. Get medical attention if irritation develops.
Inhalation	Remove the person to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if respiratory symptoms occur.
Ingestion	Wash out the mouth with water. Do not give anything by mouth to an unconscious person. Get medical attention if symptoms occur. Note: ILO ICSC 1450 contains older wording advising induced vomiting; do not follow it - induced emesis is no longer recommended practice and the producer SDS does not call for it.
5. Fire-fighting measures	
Flash point	Not flammable
Suitable extinguishing media	Water fog, foam, dry chemical powder or carbon dioxide, chosen to suit the surrounding fire. The substance itself does not contribute fuel.
Unsuitable extinguishing media	Do not use a high-pressure water jet: it will spread the material and the fire.
Special hazards arising from the substance	Hazardous gases and decomposition products may be formed in a fire, from this substance or from its packaging and the materials stored with it. Packaging and pallets are themselves a substantial fire load. That is true even though the contents do not contribute fuel.
Advice for fire-fighters	Fire-fighters must wear self-contained breathing apparatus and full protective clothing. Keep unnecessary personnel away and upwind. Prevent firefighting run-off from entering drains, surface water or groundwater.

6. Accidental release measures

Keep unnecessary personnel away and upwind, and ventilate. Wear the protective equipment in section 8, including respiratory protection, before approaching. Eliminate ignition sources and prohibit smoking before approaching. Avoid raising dust, and never blow a spilled powder down with compressed air. Dry-collect — vacuum with a HEPA-filtered unit, or sweep gently without raising dust — into labelled, closable containers for disposal under section 13. A spill inside a vessel, tank, silo, container or pit is a confined-space job: test the atmosphere and work under permit. A fine powder makes a floor slippery, especially once wet, so treat every wetted surface as slippery until it has been washed and dried. Prevent entry to drains, surface water and groundwater. Do not return spilled material to the original container; a damaged bag should be overpacked into a labelled outer rather than decanted into an unmarked one.

7. Handling and storage

- Store in a dry, covered store on pallets. Potassium chloride is hygroscopic and cakes hard if bags stand on damp floors or in open sheds through the monsoon — caking is the single most common complaint and it is almost always a storage problem, not a product problem.
- It is not classified as a dangerous good for transport and is not flammable. The dust irritates eyes and the respiratory tract; goggles, gloves and a dust mask at tipping and blending points are enough.
- In solution it is a chloride brine and will pit stainless steel, including 304 and 316, given time and temperature. Specify materials of construction for brine service accordingly — lined, GRP or high-alloy — rather than assuming stainless will hold.
- Supply for agricultural use in India is regulated under the Fertiliser (Control) Order, 1985, which governs grade, packing, labelling and who may sell. Velora holds a certificate of registration under the Order and our registration particulars are provided with the quotation. Tell us the end use at the enquiry stage so the correct grade and the regulatory position are confirmed before anything is committed.

Storage: Store in a dry location. Keep containers tightly closed and sealed - the product absorbs moisture on long-term storage and will cake. Keep away from moisture ingress and from metals it may corrode. No special fire precautions required (non-combustible).

8. Exposure controls / personal protection

Engineering controls. Enclose every transfer, tipping, bag-slitting and sampling point and fit local exhaust extraction at each, and keep airborne concentrations below the limit in force at the place of use. Provide an eyewash within reach of the working position, and a safety shower wherever the material is classified corrosive or irritant or is handled in quantity. Do not eat, drink or smoke in the handling area; wash before breaks. Where no limit is stated above, occupational exposure limits vary by jurisdiction: check the limit in force at the place of use and the producer's sheet for the grade supplied, and record which value your assessment adopted. Select eye, skin and respiratory protection on the strength of a measured or modelled exposure assessment, not on this sheet alone.

9. Physical and chemical properties

Appearance	Odourless crystalline solid or granules with a strong saline taste. Chemically pure material is white to colourless; MOP / technical fertiliser grade is commonly off-white, pink or red (Nutrien Muriate of Potash SDS lists colour as off-white, pink or red). Hygroscopic.
Physical state	Solid (crystalline)
Melting / freezing point	770 C (Nutrien SDS 770 C / 1418 F; ILO ICSC 1450 gives 770-773 C; CRC via PubChem 771 C)
Boiling point	1420 C (Nutrien SDS). PubChem/CRC records it as subliming at 1500 C rather than boiling.
Relative density	1.988 g/cm ³ (true density, 25 C, CRC via PubChem; ICSC 1.98 g/cm ³). Bulk density of MOP granules 993-1201 kg/m ³ (62-75 lb/ft ³ , Nutrien SDS).
Solubility in water	Freely soluble. 347-355 g/L at ambient temperature (Nutrien SDS); 35.5 g/100 g water at 25 C (CRC via PubChem).
pH	7 to 9 in a 10 % w/w aqueous solution (Nutrien SDS). PubChem records 'pH about 7' without stating a concentration. Essentially neutral.
Flash point	Not flammable
Auto-ignition / ignition temperature	Not available
Explosive / dust-explosion properties	Not available
Vapour pressure	Not available
Vapour density	Not available
Partition coefficient (log Pow)	Not available
Particle characteristics	Not available
Molecular weight	74.55 g/mol

10. Stability and reactivity

Incompatible materials	A mixture of salts that may be corrosive to metals (Nutrien SDS). Hygroscopic - absorbs moisture on long-term storage and cakes. Non-combustible (ICSC 1450). Keep away from moisture and from strong oxidising agents as a general precaution.
Conditions to avoid	Store in a dry location. Keep containers tightly closed and sealed - the product absorbs moisture on long-term storage and will cake. Keep away from moisture ingress and from metals it may corrode. No special fire precautions required (non-combustible).

11. Toxicological information

The health hazards classified for this substance are listed in section 2, and the corresponding first-aid measures in section 4. Numerical toxicological endpoints are not reproduced here: refer to the producer's safety data sheet for the grade supplied, and to the ECHA and PubChem entries for the substance.

12. Ecological information

Where section 2 or section 14 classifies this substance as hazardous to the aquatic environment, prevent any release to drains, surface water or groundwater and treat aqueous effluent before discharge. Otherwise, refer to the producer's sheet.

13. Disposal considerations

Dispose of the substance and its container through an authorised facility under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 where the waste is scheduled under those Rules, and otherwise as non-hazardous industrial waste, in each case under the conditions of the State Pollution Control Board consent in force at the site. Whether a particular waste stream is scheduled depends on the substance and on what it has been mixed with, so classify the waste before consigning it. Do not reuse empty containers for any other purpose.

14. Transport information

UN number	Not regulated
Class	Not regulated
Packing group	Not regulated
Proper shipping name	Not regulated. The Nutrien Muriate of Potash SDS states 'Not regulated' for UN number and for US DOT, ADR/TDG, IMDG and IATA. ILO ICSC 1450 gives no UN transport entry. Potassium chloride is not a dangerous good for transport.

15. Regulatory information

Supply in India is subject to the Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 where the substance is scheduled, and to any product-specific licensing named on the product page. Classification and labelling follow the GHS as adopted in the jurisdiction of use.

Note: Colour is not a quality indicator: MOP ranges from white through pink to red depending on the ore source and iron oxide content, and all shades can meet the same K₂O specification. Potassium chloride is neither GHS-classified nor transport-regulated, so a compliant SDS will have 'Not classified' in Section 2 and 'Not regulated' throughout Section 14; do not import hazard pictograms onto the label. Melting point figures near 770 C and the sublimation figure of 1500 C come from different sources and are not in conflict - they describe different phenomena. Bulk density (993-1201 kg/m³) and true density (1.988 g/cm³) are different properties; publish them separately and do not present bulk density as specific gravity. Potassium chloride is a medicinally active substance in concentrated form (cardiac effects on intravenous or large oral dose); that is a pharmacological property and not a GHS classification, and should not be presented as one on a technical grade specification sheet.

16. Other information

Version	1.0
Date of issue	07 October 2026
Supersedes	No previous version
Regulatory basis as at the date of issue	EU CLP Regulation 1272/2008 as amended, including Annex VI harmonised classifications; UN Model Regulations and the IMDG Code Amendment 42-24, mandatory from 1 January 2026; ADR 2025; and, in India, the Manufacture, Storage and Import of Hazardous Chemical Rules 1989 and the Central Motor Vehicles Rules 1989.

How this sheet was compiled and what governs. This sheet was prepared by Velora Chemicals Private Limited as the supplier, from PubChem, the ECHA CLP inventory including Annex VI harmonised classifications, ILO International Chemical Safety Cards and published producer safety data sheets. Values that could not be confirmed from those sources are shown as "Not available" rather than estimated. **The producer's safety data sheet for the specific grade and lot supplied is the governing document** and is issued with the consignment; where the two differ, the producer's sheet prevails. This sheet carries no warranty of the properties of any particular batch. Velora Chemicals Private Limited is a bulk supplier and trader, not a manufacturer.

Sources consulted: <https://pubchem.ncbi.nlm.nih.gov/compound/4873>;
https://pubchem.ncbi.nlm.nih.gov/rest/pug_view/data/compound/4873/JSON?heading=GHS%20Classification;
<https://products.nutrien.com/docs/2771>; <https://www.inchem.org/documents/icsc/icsc/eics1450.htm>