

Oxalic Acid

Safety data sheet in the 16-section GHS format · CAS 6153-56-6

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1. Identification of the substance and of the supplier

Product name	Oxalic Acid
Synonyms	oxalic acid powder, ethanedioic acid, oxalic acid dihydrate, acid of sugar
C.A.S. number	6153-56-6 (oxalic acid dihydrate). The anhydrous acid is CAS 144-62-7 - a 99.6 % commercial product is the dihydrate and must carry 6153-56-6.
Molecular formula	C ₂ H ₂ O ₄ .2H ₂ O (HOOC-COOH.2H ₂ O)
Grade supplied	99.6% min
Product group	Mineral & Organic Acids
Identified uses	Marble & stone polishing, Rust & stain removal, Textile processing, Metal treatment, Leather, Wood restoration
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	Danger under the classification actually used by producers (because Eye Dam. 1 H318 or Skin Corr. 1 H314 is applied). Warning if the EU harmonised Annex VI entry is applied on its own - that entry carries only GHS07 and the signal word Warning.
Hazard classification	This substance has a genuine and material split between the harmonised entry and what suppliers actually notify, and it must not be flattened. (1) EU HARMONISED, Annex VI to CLP: Acute Tox. 4 - H302 and Acute Tox. 4 - H312 ONLY. Signal word Warning; single pictogram GHS07. No eye, skin-corrosion or respiratory endpoint is harmonised. (2) SUPPLIER SELF-CLASSIFICATION notified to the ECHA C&L Inventory (1282 reports): H302 at 99.8 % and H312 at 99.7 % agreement, matching the harmonised entry - but Eye Dam. 1 - H318 is reported by only 31.1 % of reports, i.e. a MINORITY. Where H318 is applied the pictogram set gains GHS05 and the signal word becomes Danger. (3) ILO ICSC 0529 states 'Causes severe skin burns and eye damage' (H314) and 'May cause respiratory irritation' (H335) - a stricter position than the EU harmonised entry, and stricter again than the notified majority. (4) Individual producer SDS differ accordingly: Univar/Hill Brothers 99.6 % dihydrate declares Acute Tox. 4 H302 + Eye Dam. 1 H318 with signal word Danger; Loba Chemie declares H302 + H312 + Skin Corr. 1 H314 with signal word Danger. Report the harmonised entry as the legal baseline and disclose the eye/skin endpoints as the widely-but-not-universally-applied additions, naming which is which.

3. Composition / information on ingredients

Substance	Oxalic Acid
C.A.S. number	6153-56-6 (oxalic acid dihydrate). The anhydrous acid is CAS 144-62-7 - a 99.6 % commercial product is the dihydrate and must carry 6153-56-6.
Molecular weight	126.07 g/mol (dihydrate); 90.03 g/mol (anhydrous)
Composition	99.6% min

4. First-aid measures

Eye contact	Rinse immediately with plenty of water for at least 15 minutes, holding the eyelids apart. Remove contact lenses if easily possible. Take the person to hospital / refer immediately for medical attention - serious eye damage is possible.
Skin contact	Remove contaminated clothing. Rinse the affected skin with plenty of water or shower for at least 15 minutes, then wash with soap and plenty of water. Refer for medical attention. Harmful in contact with skin (H312); several producers also treat it as skin-corrosive, so treat significant contact as a chemical burn.
Inhalation	Remove the person to fresh air and keep at rest in a half-upright position. If not breathing, give artificial respiration. Refer immediately for medical attention. Dust and mist may cause respiratory irritation.
Ingestion	Rinse the mouth. Do NOT induce vomiting. Do not give anything by mouth to an unconscious person. Take the person immediately to hospital / refer immediately for medical attention. Harmful if swallowed (H302); oxalic acid is systemically toxic - it precipitates calcium as insoluble calcium oxalate, causing hypocalcaemia and renal injury, so a swallowed dose warrants medical assessment even if the person initially appears well. Keep the respiratory tract clear.

5. Fire-fighting measures

Flash point	Not applicable (Univar 99.6 % dihydrate SDS). The material is a combustible solid that decomposes on heating rather than flashing; it is not classified as a flammable solid.
Suitable extinguishing media	Water spray, dry chemical powder, foam or carbon dioxide — all four are accepted by ICSC 0529 and ICSC 0707, and no authority prohibits an agent for this material. Cool fire-exposed drums and bags with water spray. Confirm the medium against the producer's safety data sheet for the grade supplied.
Unsuitable extinguishing media	Do not use a high-volume or solid water jet: it raises a dust cloud from the burning and the adjacent material and spreads the spill. Keep silver and silver compounds, strong oxidants, chlorites and strong alkalis out of the fire area — oxalic acid forms explosive silver oxalate with silver compounds and reacts violently with strong oxidants.
Special hazards arising from the substance	The material is combustible but will not sustain flame spread on its own: it has to be preheated before it ignites, and the dihydrate carries about 28% water of crystallisation. It sublimates from roughly 100 °C, so the plume contains oxalic acid itself as well as combustion products. On contact with hot surfaces or flame it decomposes to formic acid and carbon monoxide (ICSC 0529, ICSC 0707) — both are the controlling inhalation hazard, and carbon monoxide is odourless. Packaging and pallets are themselves a substantial fire load. Sources differ on the fire behaviour of this material: ICSC and the NIOSH Pocket Guide call it combustible, while CAMEO Chemicals (USCG 1999) records it as not flammable. The sheet follows the more protective position.

Advice for fire-fighters

Fire-fighters must wear self-contained breathing apparatus and full protective clothing. Keep unnecessary personnel away and upwind. Because it decomposes to carbon monoxide and formic acid rather than forming a char, a deep-seated smouldering bed is not expected in this material and surface application is effective. 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

- Oxalic acid is toxic. The EU harmonised classification is Acute Tox. 4 by the oral and dermal routes — harmful if swallowed and harmful in contact with skin. It carries no harmonised eye or skin corrosion entry, though around a third of notifiers self-classify it as causing serious eye damage, and the ILO safety card goes further again with H314, causes severe skin burns and eye damage, plus respiratory irritation. Work to the more protective position: chemical goggles and face protection, impervious gloves, covered skin, and no eating, drinking or smoking where it is handled.
- Swallowing it, even in small quantity, causes severe internal injury and can lead to kidney failure through calcium oxalate crystals. Never decant it into an unlabelled container, and never into a drink bottle.
- On ingestion, rinse the mouth, do not induce vomiting, and get immediate medical attention. On skin or eye contact, rinse with running water for at least 15 minutes and seek medical attention.
- Store in a dry, covered store away from alkalis, oxidising agents, silver and mercury salts. Keep the dust down — use extraction at tipping and bag-splitting points.
- It attacks concrete, marble, galvanised steel and aluminium. Bund and line floors where solutions are made up, and do not let spillage sit on stone or on a galvanised gutter.
- Solid oxalic acid dihydrate is commonly consigned as UN 3261, corrosive solid, acidic, organic, n.o.s., Class 8, packing group III — though because it does not meet the UN Model Regulations skin-corrosion criteria on the test data some producers hold, a number of suppliers declare it unregulated for transport. Work from the safety data sheet and the consignor's declaration for the lot you receive rather than assuming either position.
- Oxalic acid is a Schedule I substance, with no concentration threshold, under the Gujarat Poisons (Regulation and Control of Sale and Use of Acid) Rules, 2014. The obligation runs on the seller as much as the buyer: selling it or holding it for sale requires a licence in Form A, and every sale has to be recorded against the purchaser's government photo identity in the prescribed registers, with stocks declared to the Sub-Divisional Magistrate. Velora holds the Form A licence required to supply oxalic acid, and our licence particulars are provided with the quotation. We quote only where the licence position can be documented at both ends, and we do not sell for personal or unrecorded use.

Storage: Store in a dry, cool, well-ventilated place with the container tightly closed. Keep separated from strong oxidising agents, from silver and silver compounds, from alkalis, and from food and feedstuffs. Protect from moisture (the material is hygroscopic and will cake). Store in the original container; keep locked up. Do not store in or transfer with equipment containing silver.

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	Hygroscopic colourless or white crystals, or white crystalline powder. Odourless.
Physical state	Solid (crystalline)
Melting / freezing point	101.5 C for the 99.6 % dihydrate (Univar/Hill Brothers SDS); Loba Chemie gives 104-106 C for dihydrate AR grade. The dihydrate loses its water of crystallisation on heating, so reported values scatter. ILO ICSC 0529 gives 189.5 C, which is the ANHYDROUS acid - do not apply it to a dihydrate product.
Boiling point	Not available - the substance sublimates and decomposes rather than boiling. Univar reports 149-160 C (decomposition); ICSC 0529 notes that oxalic acid may sublime above 100 C at reduced pressure, with an optimal sublimation temperature of 157 C.
Relative density	1.65 g/cm ³ at 20 C (dihydrate, Loba Chemie SDS). ICSC 0529 gives 1.9 g/cm ³ , which refers to the anhydrous acid. The Univar 99.6 % dihydrate SDS states 'no data available'.
Solubility in water	Soluble. 118 g/L at 25 C (Loba Chemie SDS); ICSC 0529 gives 9-10 g/100 mL at 20 C, described as moderate. Also soluble in ethanol.
pH	1.5 in a 10 % w/w aqueous solution at 20 C (Loba Chemie SDS). The Univar 99.6 % dihydrate SDS gives 1.3 at 20-25 C but does not state the concentration, so that figure should not be published without the qualifier. Strongly acidic - oxalic acid is a considerably stronger acid than acetic acid.
Flash point	Not applicable (Univar 99.6 % dihydrate SDS). The material is a combustible solid that decomposes on heating rather than flashing; it is not classified as a flammable solid.
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	126.07 g/mol (dihydrate); 90.03 g/mol (anhydrous)

10. Stability and reactivity

Incompatible materials	Reacts violently with strong oxidising agents. Reacts with silver and silver compounds to form silver oxalate, which is explosive and shock-sensitive (ICSC 0529). Decomposes on heating. Incompatible with alkalis and with strong bases. Attacks many metals in the presence of moisture; forms insoluble oxalates with calcium and other alkaline-earth metals. Keep separated from food and feedstuffs.
Conditions to avoid	Store in a dry, cool, well-ventilated place with the container tightly closed. Keep separated from strong oxidising agents, from silver and silver compounds, from alkalis, and from food and feedstuffs. Protect from moisture (the material is hygroscopic and will cake). Store in the original container; keep locked up. Do not store in or transfer with equipment containing silver.

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	Divergent and traceable to the classification split above. ILO ICSC 0529 and the ADR/UN Model Regulations route give UN 3261. Producer SDS for the 99.6 % dihydrate frequently declare it NOT REGULATED: Univar/Hill Brothers states 'Not regulated as a dangerous good' for DOT, IATA and the IMDG Code, and Loba Chemie states 'Not regulated' for UN number, shipping name, class and packing group.
Class	8 (Corrosive) where UN 3261 is declared; none where the producer declares the material not regulated.
Packing group	III where UN 3261 is declared (ICSC 0529); not applicable where the producer declares the material not regulated.
Proper shipping name	CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S. (Oxalic acid) where UN 3261 Class 8 PG III is declared. The reason for the divergence is logical rather than an error by either party: UN 3261 is a Class 8 entry and only applies where the substance is classified as skin-corrosive. Under the EU harmonised entry - Acute Tox. 4 oral and dermal only, with no H314 - oxalic acid dihydrate does not meet Class 8 criteria and is therefore not a dangerous good. Producers who self-classify H314 (as ICSC and Loba Chemie do) reach Class 8 and declare UN 3261. Declare transport consistently with the classification you have adopted in Section 2 of your own SDS, and state which position you have taken.

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: Two nuances must survive onto the published documents. First, classification: the EU harmonised Annex VI entry is ONLY Acute Tox. 4 oral (H302) and Acute Tox. 4 dermal (H312), signal word Warning, single GHS07 pictogram. Eye Dam. 1 (H318) is a supplier self-classification carried by a minority of notifiers (31.1 %), and the H314 on ILO ICSC 0529 is stricter still. Present the harmonised entry as the baseline and the eye/skin endpoints as disclosed additions - do not merge them into a single undifferentiated hazard list. Second, transport: UN 3261 Class 8 PG III and 'not regulated' are both in genuine commercial use, and which applies follows directly from whether you classify the material as skin-corrosive. Third, hydrate identity: a 99.6 % product is the DIHYDRATE (CAS 6153-56-6, 126.07 g/mol, melting about 101-102 C). Quoting the anhydrous CAS 144-62-7, the anhydrous molecular weight 90.03, the anhydrous melting point 189.5 C or the anhydrous density 1.9 g/cm³ on a dihydrate specification sheet are all common errors, and the assay basis (dihydrate versus anhydrous) changes the effective acid content by about 40 %. Fourth, the silver oxalate explosion hazard is a real and under-reported incompatibility worth stating explicitly. Fifth, publish the pH only with its concentration.

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://www.inchem.org/documents/icsc/icsc/eics0529.htm>; <https://pubchem.ncbi.nlm.nih.gov/compound/971>; https://pubchem.ncbi.nlm.nih.gov/rest/pug_view/data/compound/971/JSON?heading=GHS%20Classification; <https://www.hillbrothers.com/wp-content/uploads/2023/01/Oxalic-Acid-99.6-Dihydrate-Univar-Solutions-11-14-2022.pdf>; <https://www.lobachemie.com/lab-chemical-msds/MSDS-OXALIC-ACID-CASNO-6153-56-05074-EN.aspx>