

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:**  $\alpha$ -Ketoglutaric acid  
Alpha keto glutaric acid  
2-oxoglutaric acid
- **Article number:** 104124
- **CAS Number:**  
328-50-7
- **EC number:**  
206-330-3
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**  
No further relevant information available.
- **Application of the substance / the mixture**  
Laboratory chemicals  
Pharmaceutical intermediate
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Fagron UK Ltd  
4B Coquet St  
Newcastle upon Tyne  
England NE1 2QB  
Tel. 0845 6522525
- **Further information obtainable from:**  
Emergency response telephone number:  
+44 (0) 845 652 2525
- **1.4 Emergency telephone number:**  
Emergency response telephone number:  
+44 (0) 845 652 2525

## SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**  
Eye Dam. 1 H318 Causes serious eye damage.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**  
The substance is classified and labelled according to the GB CLP regulation.
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard statements**  
H318 Causes serious eye damage.
- **Precautionary statements**  
P280 Wear eye protection / face protection.  
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P310 Immediately call a POISON CENTER/doctor.

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2-oxoglutaric acid

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- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## **SECTION 3: Composition/information on ingredients**

- **3.1 Substances**
- **CAS No. Description**  
CAS: 328-50-7  $\alpha$ -Ketoglutaric acid  
Alpha keto glutaric acid  
2-oxoglutaric acid
- **Identification number(s)**
- **EC number:** 206-330-3

## **SECTION 4: First aid measures**

- **4.1 Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Immediately wash with water and soap and rinse thoroughly.  
If skin irritation continues, consult a doctor.
- **After eye contact:**  
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**  
Rinse out mouth and then drink plenty of water.  
If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**  
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

## **SECTION 5: Firefighting measures**

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**  
Water  
Foam  
Carbon dioxide  
Fire-extinguishing powder
- **5.2 Special hazards arising from the substance or mixture**  
Carbon monoxide (CO)  
Formation of toxic gases is possible during heating or in case of fire.
- **5.3 Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

## **SECTION 6: Accidental release measures**

- **6.1 Personal precautions, protective equipment and emergency procedures**  
Wear protective equipment. Keep unprotected persons away.  
Avoid formation of dust.  
Ensure adequate ventilation

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2-oxoglutaric acid

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- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**  
Use neutralising agent.  
Dispose contaminated material as waste according to section 13.
- **6.4 Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## SECTION 7: Handling and storage

- **7.1 Precautions for safe handling** Thorough dedusting.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:**  
Store in cool, dry conditions in well sealed receptacles.
- **Maximum storage temperature:** 8 °C
- **Minimum storage temperature:** 2°C
- **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Appropriate engineering controls** No further data; see section 7.
- **Individual protection measures, such as personal protective equipment**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes and skin.
- **Respiratory protection:**  
Filter P1  
Suitable respiratory protective device recommended.
- **Hand protection**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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2-oxoglutaric acid

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- **Material of gloves**  
Nitrile rubber, NBR  
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye/face protection**



Tightly sealed goggles

- **Body protection:** Protective work clothing

## SECTION 9: Physical and chemical properties

### · 9.1 Information on basic physical and chemical properties

#### · General Information

- |   |                           |
|---|---------------------------|
| · <b>Physical state</b>   | Solid                     |
| · <b>Colour:</b>  | White                     |
| · <b>Odour:</b>   | Characteristic            |
| · <b>Odour threshold:</b>   | Not determined.           |
| · <b>Melting point/freezing point:</b>                            | 114–117°C                 |
| · <b>Boiling point or initial boiling point and boiling range</b> | Undetermined.             |
| · <b>Flammability</b>   | Product is not flammable. |
| · <b>Lower and upper explosion limit</b>                          |                           |
| · <b>Lower:</b>   | Not determined.           |
| · <b>Upper:</b>   | Not determined.           |
| · <b>Flash point:</b>   | Not applicable.           |
| · <b>Decomposition temperature:</b>                               | Not determined.           |
| · <b>pH</b>   | Not applicable.           |
| · <b>Viscosity:</b>   |                           |
| · <b>Kinematic viscosity</b>                                      | Not applicable.           |
| · <b>Dynamic:</b>   | Not applicable.           |
| · <b>Solubility</b>   |                           |
| · <b>water at 20°C:</b>   | 100 g/l                   |
| · <b>Partition coefficient n-octanol/water (log value)</b>        | Not determined.           |
| · <b>Vapour pressure:</b>   | Not applicable.           |
| · <b>Density and/or relative density</b>                          |                           |
| · <b>Density at 20°C:</b>   | 1.637 g/cm <sup>3</sup>   |
| · <b>Relative density</b>   | Not determined.           |
| · <b>Vapour density</b>   | Not applicable.           |

### · 9.2 Other information

- **Appearance:**
- **Form:** Crystalline
- **Important information on protection of health and environment, and on safety.**
- **Ignition temperature:** Not determined.

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Trade name:  $\alpha$ -Ketoglutaric acid  
Alpha keto glutaric acid  
2-oxoglutaric acid

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|--------------------------------|---|
| · <b>Explosive properties:</b> | Product does not present an explosion hazard. |
| · <b>Molecular weight</b>      | 146.1 g/mol                                   |
| · <b>Change in condition</b>   |   |
| · <b>Evaporation rate</b>      | Not applicable.                               |

- |  |      |
|--|------|
| · <b>Information with regard to physical hazard classes</b>                        |      |
| · <b>Explosives</b>  | Void |
| · <b>Flammable gases</b>   | Void |
| · <b>Aerosols</b>  | Void |
| · <b>Oxidising gases</b>   | Void |
| · <b>Gases under pressure</b>  | Void |
| · <b>Flammable liquids</b>   | Void |
| · <b>Flammable solids</b>  | Void |
| · <b>Self-reactive substances and mixtures</b>                                     | Void |
| · <b>Pyrophoric liquids</b>  | Void |
| · <b>Pyrophoric solids</b>   | Void |
| · <b>Self-heating substances and mixtures</b>                                      | Void |
| · <b>Substances and mixtures, which emit flammable gases in contact with water</b> | Void |
| · <b>Oxidising liquids</b>   | Void |
| · <b>Oxidising solids</b>  | Void |
| · <b>Organic peroxides</b>   | Void |
| · <b>Corrosive to metals</b>   | Void |
| · <b>Desensitised explosives</b>   | Void |

## SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with strong oxidising agents.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

## SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

Oral	LD50	5000–10000 mg/kg (rat)
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- **Serious eye damage/irritation** Causes serious eye damage.
- **11.2 Information on other hazards**
- **Endocrine disrupting properties** Substance is not listed.

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**Trade name:** α-Ketoglutaric acid  
 Alpha keto glutaric acid  
 2-oxoglutaric acid

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## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Endocrine disrupting properties**  
 The product does not contain substances with endocrine disrupting properties.
- **12.7 Other adverse effects**
- **Additional ecological information:**
- **General notes:**  
 Must not reach sewage water or drainage ditch undiluted or unneutralised.  
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

## SECTION 14: Transport information

· <b>14.1 UN number or ID number</b>	
· <b>ADR, IMDG, IATA</b>	not regulated
· <b>14.2 UN proper shipping name</b>	
· <b>ADR, IMDG, IATA</b>	not regulated
· <b>14.3 Transport hazard class(es)</b>	
· <b>ADR, ADN, IMDG, IATA</b>	
· <b>Class</b>	not regulated
· <b>14.4 Packing group</b>	
· <b>ADR, IMDG, IATA</b>	not regulated
· <b>14.5 Environmental hazards:</b>	Not applicable.
· <b>14.6 Special precautions for user</b>	Not applicable.
· <b>14.7 Maritime transport in bulk according to IMO instruments</b>	Not applicable.

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· **UN "Model Regulation":** not regulated

## **SECTION 15: Regulatory information**

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **Directive 2012/18/EU**
- **Named dangerous substances - ANNEX I** Substance is not listed.
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## **SECTION 16: Other information**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:**  
Fagron UK  
Quality Assurance
- **Contact:** quality@fagron.co.uk
- **Abbreviations and acronyms:**  
ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonised System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
CAS: Chemical Abstracts Service (division of the American Chemical Society)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
- **\* Data compared to the previous version altered.**

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