## Section 1 - Chemical Product and Company Identification

**MSDS Name:** 2-Ketoglutaric acid, 98%

**Catalog Numbers:** AC122860000, AC122860250, AC122861000, AC122865000

**Synonyms:** 2-Oxopentanedioic acid; 2-Oxoglutaric acid; alpha-Ketoglutaric acid.

**Company Identification:**

Acros Organics BVBA  
Janssen Pharmaceuticaal 3a  
2440 Geel, Belgium

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01

For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99

Emergency Number US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

CHEMTREC Phone Number, Europe: 703-527-3887

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## Section 2 - Composition, Information on Ingredients

### Risk Phrases:

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>328-50-7</td>
<td>2-Ketoglutaric acid</td>
<td>98</td>
<td>206-330-3</td>
</tr>
</tbody>
</table>

### Hazard Symbols:

<table>
<thead>
<tr>
<th>SEC</th>
<th>H-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>XI</td>
<td></td>
</tr>
</tbody>
</table>

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### Risk Phrases:

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical Name</th>
<th>%</th>
<th>EINECS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>7732-18-5</td>
<td>Water</td>
<td>&lt;1</td>
<td>231-791-2</td>
</tr>
</tbody>
</table>

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Text for R-phrases: see Section 16

<table>
<thead>
<tr>
<th>Hazard Symbols</th>
<th>XI</th>
</tr>
</thead>
</table>

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## Section 3 - Hazards Identification

EMERGENCY OVERVIEW
Warning! The toxicological properties of this material have not been fully investigated. Causes eye irritation and possible injury. May cause skin and respiratory tract irritation. Keep refrigerated. (Store below 4°C/39°F.) Target Organs: Eyes.

Potential Health Effects

Eye: Causes eye irritation. May result in corneal injury.
Skin: May cause skin irritation.
Ingestion: May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated.
Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.
Chronic: No information found.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.
Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

Autoignition Temperature: Not available.
Flash Point: Not available
Explosion Limits: Lower: Not available
Explosion Limits: Upper: Not available
NFPA Rating: health: 2; flammability: 1; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.
Storage: Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Refrigeration has been recommended.

Section 8 - Exposure Controls, Personal Protection

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH</th>
<th>NIOSH</th>
<th>OSHA - Final PELs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-Ketoglutaric acid</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
<tr>
<td>Water</td>
<td>none listed</td>
<td>none listed</td>
<td>none listed</td>
</tr>
</tbody>
</table>
OSHA Vacated PELs: 2-Ketoglutaric acid: None listed Water: None listed

Engineering Controls:
Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Personal Protective Equipment
Eyes: Wear chemical splash goggles.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Color: white to off-white
Odor: none reported
pH: 1.5 (50g/l of water)
Vapor Pressure: Negligible.
Vapor Density: Not available
Evaporation Rate: Negligible.
Viscosity: Not available
Boiling Point: 137.8 deg C (280.04°F)
Freezing/Melting Point: 113-115 deg C

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Conditions to Avoid: Dust generation, excess heat.
Incompatibilities with Other Materials Strong oxidizing agents, strong bases.
Hazardous Decomposition Products Carbon monoxide, carbon monoxide, carbon dioxide.
Hazardous Polymerization Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 328-50-7: None listed
CAS# 7732-18-5: ZC0110000
RTECS: Not available. RTECS:
LD50/LC50: **CAS# 7732-18-5**: Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity: 2-Ketoglutaric acid - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other: Please contact Acros for more information.

Not available

Section 12 - Ecological Information

Section 13 - Disposal Considerations
Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: Not regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:
Canada TDG
Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI
Risk Phrases:
R 41 Risk of serious damage to eyes.
Safety Phrases:
S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)
CAS# 328-50-7: 0
CAS# 7732-18-5: Not available

Canada
CAS# 328-50-7 is listed on Canada's DSL List
CAS# 7732-18-5 is listed on Canada's DSL List
Canadian WHMIS Classifications: D2B
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.
CAS# 328-50-7 is not listed on Canada's Ingredient Disclosure List.
CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

US Federal
TSCA
CAS# 328-50-7 is listed on the TSCA Inventory.
CAS# 7732-18-5 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 5/21/1999
Revision #8 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.