



MATERIAL SAFETY DATA SHEET

Product: CARECITRIC CITRIC ACID ANHYDROUS

I – PRODUCT IDENTIFICATION AND MANUFACTURER/SUPPLIER IDENTIFICATION

Material name: CARECITRIC CITRIC ACID, Anhydrous

Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid

Chemical Formula: $H_3C_6H_5O_7$

Supplier: Caremoli USA, Inc.
23959 580 th Ave
Ames, Iowa 50010 USA
Tel. 515-233-1255
Fax. 515-233-2933

II – COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name: Citric Acid Anhydrous

Cas. no.: 77-92-9

% : 99 - 100%

Molecular Weight: 192.12

E Code: E 330

III – HAZARDS IDENTIFICATION

Emergency Overview

Warning! Causes severe eye irritation. Causes irritation to skin and respiratory tract.

Health Rating: 0 - None

Flammability Rating: 1 - Slight

Reactivity Rating: 0 - None

Contact Rating: 1 - Slight

Lab Protective Equip: Goggles; Lab Coat

Storage Color Code: Orange (General Storage)

Potential Health Effects: the product is relatively non-hazardous in routine industrial situations. It is not expected to present significant health risks to the workers who use it.

Inhalation: May cause mild irritation to the respiratory tract.

Ingestion: Large oral doses may cause gastrointestinal disturbances.

Skin Contact: May cause mild irritation.

Eye Contact: Highly irritating; may also be abrasive.

Chronic Exposure: Chronic or heavy acute ingestion may cause tooth enamel erosion.

Aggravation of Pre-existing Conditions: No adverse health effects expected.

IV – FIRST AID MEASURES

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if irritation persists.



MATERIAL SAFETY DATA SHEET

Product: CARECITRIC CITRIC ACID ANHYDROUS

| | |
|----------------------|--|
| Ingestion: | Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention. |
| Skin Contact: | Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse. |
| Eye Contact: | Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately. |

V – FIREFIGHTING MEASURES

| | |
|----------------------------------|--|
| Fire: | Autoignition temperature: 1011°C (1852F) As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. |
| Explosion: | Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. |
| Fire Extinguishing Media: | Water spray, dry chemical, alcohol foam, or carbon dioxide. |
| Special Information: | In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. |

VI – ACCIDENTAL RELEASE MEASURES

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal.

VII – HANDLING AND STORAGE

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from any source of heat or ignition. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

Airborne Exposure Limits:

- OSHA Permissible Exposure Limit (PEL): 15 mg/m³ total dust, 5 mg/m³ respirable fraction for nuisance dusts.
- ACGIH Threshold Limit Value (TLV): 10 mg/m³ total dust containing no asbestos and <1% crystalline silica for Particulates Not Otherwise Classified (PNOC).

A system of local and/or general exhaust is recommended to keep employee exposures below



MATERIAL SAFETY DATA SHEET

Product: CARECITRIC CITRIC ACID ANHYDROUS

the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, Industrial Ventilation, A Manual of Recommended Practices, most recent edition, for details. be considered.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face dust/mist respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece dust/mist respirator may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator.

WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

IX – PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--|------------------------------------|
| Appearance: | White granules. |
| Odor: | Odorless. |
| Solubility: | ca. 60 g/100 ml @ 20°C (Anhydrous) |
| Density: | 1.665 @ 20°C/4°C |
| pH: | 2.2 (0.1 N sol) |
| % Volatiles by volume@21°C(70°F): | 0 |
| Boiling Point: | No information found. |
| Melting Point: | 153°C (307F) |
| Vapor Density (Air=1): | No information found. |
| Vapor Pressure (mm Hg): | No information found. |
| Evaporation Rate (BuAc=1): | No information found. |

X – REACTIVITY AND STABILITY

| | |
|--|--|
| Stability: | Stable under ordinary conditions of use and storage. |
| Hazardous Decomposition Products: | Carbon dioxide and carbon monoxide may form when heated to decomposition. |
| Hazardous Polymerization: | Will not occur. |
| Incompatibilities: | Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys. |
| Conditions to Avoid: | Heat, flames, ignition sources and incompatibles. |



MATERIAL SAFETY DATA SHEET

Product: CARECITRIC CITRIC ACID ANHYDROUS

XI – TOXICOLOGICAL INFORMATION

Oral rat LD50: 3 g/kg; irritation skin rabbit: 500 mg/24H mild; eye rabbit: 750 ug/24H severe.

-----\Cancer Lists\-----

---NTP Carcinogen---

| Ingredient | Known | Anticipated | IARC Category |
|-----------------------|-------|-------------|---------------|
| Citric Acid (77-92-9) | No | No | None |

XII – ECOLOGICAL INFORMATION

Environmental Fate: No information found.

Environmental Toxicity: No information found.

XIII – DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

XIV – TRANSPORTATION INFORMATION

Not regulated.

XV – REGULATORY INFORMATION

-----\Chemical Inventory Status - Part 1\-----

| Ingredient | TSCA | EC | Japan | Australia |
|-----------------------|------|-----|-------|-----------|
| Citric Acid (77-92-9) | Yes | Yes | Yes | Yes |

-----\Chemical Inventory Status - Part 2\-----

--Canada--

| Ingredient | Korea | DSL | NDSL | Phil. |
|-----------------------|-------|-----|------|-------|
| Citric Acid (77-92-9) | Yes | Yes | No | Yes |

-----\Federal, State & International Regulations - Part 1\-----

-SARA 302- -----SARA 313-----

| Ingredient | RQ | TPQ | List | Chemical Catg. |
|-----------------------|----|-----|------|----------------|
| Citric Acid (77-92-9) | No | No | No | No |

-----\Federal, State & International Regulations - Part 2\-----

| Ingredient | CERCLA | -RCRA- | -TSCA- |
|-----------------------|--------|--------|--------|
| Citric Acid (77-92-9) | No | 261.33 | 8(d) |
| | | No | No |



MATERIAL SAFETY DATA SHEET

Product: CARECITRIC CITRIC ACID ANHYDROUS

| | | | | | |
|-------------------------------------|-----------------------|--------------------|----|------------------|----|
| Chemical Weapons Convention: | No | TSCA 12(b): | No | CDTA: | No |
| SARA 311/312: Acute: | Yes | Chronic: | No | Fire: | No |
| | | | | Pressure: | No |
| Reactivity: | No (Pure / Solid) | | | | |
| Australian Hazchem Code: | No information found. | | | | |
| Poison Schedule: | No information found. | | | | |

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

XVI – OTHER INFORMATION

Caremoli USA, Inc., cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the users' responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. This information is given in good faith, but no warranty, express or implied is made.