



MATERIAL SAFETY DATA SHEET (M.S.D.S)

Citric Acid

DATE: NOV.17,2009

THE DATA GIVEN HERE IS BASED ON CURRENT KNOWLEDGE AND EXPERIENCE. THE PURPOSE OF THIS MATERIAL SAFETY DATA SHEET IS TO DESCRIBE THE PRODUCTS IN TERMS OF THEIR SAFETY REQUIREMENTS. THE DATA DOES NOT SIGNIFY ANY WARRANTY WITH REGARD TO THE PRODUCT PROPERTIES.

1. IDENTIFICATION OF THE SUBSTANCES

CITRIC ACID ANHYDROUS

2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS NAME: 2-HYDROXYPROPANE-1, 2, 3-TRICARBOXYLIC ACID

CAS NO.: 77-92-9 (CITRIC ACID ANHYDROUS)

3. HAZARDS IDENTIFICATION

EYES: CONTACT MAY CAUSE TRANSIENT EYE IRRITATION

SKIN: LOW HAZARD FOR USUAL INDUSTRIAL HANDLING

INGESTION: PERMITTED FOOD ADDITIVE. INGESTION OF LARGE AMOUNT MAY CAUSE DIGESTIVE TRACT IRRITATION.

INHALATION: MAY CAUSE RESPIRATORY TRACT IRRITATION.

CHRONIC: NOT AVAILABLE.

4. FIRST-AID MEASURES

EYES: CONTAMINATION OF THE EYES MUST BE TREATED BY THOROUGH IRRIGATION WITH WATER, WITH THE EYELIDS HELD OPEN. EVENTUALLY A DOCTOR (OR EYE SPECIALIST) SHOULD BE CONSULTED.

SKIN: WASH SKIN WITH PLENTY OF WATER.

INGESTION: GIVE ANTACID AND MILK AFTER INGESTION OF LARGE AMOUNTS.

INHALATION: REMOVE FROM EXPOSURE TO FRESH AIR IMMEDIATELY. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN.

NOTES TO PHYSICIAN: TREAT SYMPTOMATICALLY.

5. FIRE-FIGHTING MEASURES

GENERAL INFORMATION: DOES NOT BURN READILY. AS IN ANY FIRE, WEAR A SELF-CONTAINED BREATHING APPARATUS IN PRESSURE-DEMAND. MSHA/NIOSH (APPROVED OR EQUIVALENT), AND FULL PROTECTIVE GEAR.

EXTINGUISHING MEDIA: NO RESTRICTION.

AUTOIGNITION TEMPERATURE: NOT AVAILABLE.

FLASH POINT: NOT AVAILABLE.

EXPLOSION LIMITS: NOT AVAILABLE.

6. ACCIDENTAL RELEASE MEASURES

GENERAL INFORMATION: USE PROPER PERSONAL PROTECTIVE EQUIPMENT AS INDICATED IN EXPOSURE CONTROL/ PERSONAL PROTECTION CLAUSE.

SPILLS/LEAKS: TAKE UP MECHANICALLY, AVOID DUST FORMATION. RINSE AWAY RESIDUE WITH PLENTY OF WATER.

7. HANDING AND STORAGE

HANDING: AVOID BREATHING DUST, VAPOR, MIST, OR GAS. AVOID CONTACT WITH SKIN AND EYES.

STORAGE: NON-TOXIC. PERMITTED FOOD ADDITIVE. KEEP CONTAINER DRY IN A COOL AND WELL-VENTILATED PLACE. NO SPECIAL MEASURES REQUIRED.

8. PERSONAL PROTECTION

EYE PROTECTION: WEAR APPROPRIATE PROTECTIVE EYEGLASSES OR CHEMICAL SAFETY GOGGLES AS DESCRIBED BY OSHA'S EYE AND FACE PROTECTION REGULATION IN 29 CFR 1910.133 OR EUROPEAN STANDARD EN166.

SKIN PROTECTION: WEAR APPROPRIATE PROTECTIVE RUBBER GLOVES TO PREVENT SKIN EXPOSURE. AVOID PROLONGED SKIN CONTACT. WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT SKIN EXPOSURE.

RESPIRATORY PROTECTION: IF PRODUCT FORMS DUST, WEAR DUCT-PROTECTION MASK, AVOID INHALING DUST. FOLLOW THE OSHA RESPIRATOR REGULATIONS FOUND IN 29CFR 1910. 134 OR EUROPEAN STANDARD EN 149. ALWAYS USE A NIOSH OR EUROPEAN STANDARD EN 149 APPROVED RESPIRATOR WHEN NECESSARY.

9. EXPOSURE CONTROLS

ENGINEERING CONTROLS: USE ADEQUATE VENTILATION TO KEEP AIRBORNE CONCENTRATIONS LOW.

10. PHYSICAL AND CHEMICAL PROPERTIES

MOLECULAR FORMULA:	C ₆ H ₈ O ₇ (CITRIC ACID ANHYDROUS)
MOLECULAR WEIGHT:	192.12 (CITRIC ACID ANHYDROUS)
FORM:	CRYSTALLINE
COLOR:	COLORLESS
ODOR:	ODORLESS
MELTING POINT:	153°C (CITRIC ACID ANHYDROUS)
VISCOSITY:	NOT AVAILABLE
BOILING POINT:	NOT AVAILABLE
VAPOR PRESSURE	NEGLIGIBLE
SOLUBILITY IN WATER:	1650 G/L AT 25°C (AS C ₆ H ₈ O ₇)
PH VALUE:	1.8 (5% W/V SOLUTION)
BULK DENSITY:	900-1050 KG/CBM

11. STABILITY AND REACTIVITY

CHEMICAL STABILITY: STABLE UNDER NORMAL TEMPERATURES AND PRESSURES.
CONDITION TO AVOID: MAY LUMP UNDER A CERTAIN PRESSURE OR IN THE HIGH TEMPERATURE CONDITION. AFTER A LONG-TIME EXPOSURE IN THE OPENING ENVIRONMENT, THE MATERIAL MAY DECOMPOSE AND BE YELLOWISH.
INCOMPATIBILITIES WITH OTHER MATERIALS: ALKALESCENCE MATERIALS.
THERMAL DECOMPOSITION: BEGINS TO CHAR AT 170°C
HAZARDOUS DECOMPOSITION PRODUCTS: PRODUCTS NOT DETERMINED

FURTHER INFORMATION: IN SOLUTION WILL VERY SLOWLY CORRODE MILD STEEL AND SOFTEN CONCRETE. CONTAINER MADE BY STAINLESS STEEL (316L), PLASTIC OR ALUMINUM CAN BE USED FOR THE STORAGE OF DRY SOLID.

12. TOXICOLOGICAL INFORMATION

WITH MANY YEARS OF EXPERIENCE IN THE PRODUCTION AND USE OF THE PRODUCT NO EFFECTS DETRIMENTAL TO HEALTH ARE KNOWN.
LO50 (ORAL) 11, 700 MG/KG TESTED IN RATS

13. DISPOSAL CONSIDERATIONS

WASH TO DRAIN WITH COPIOUS QUANTITIES OF WATER OR NEUTRALISE WITH LIME OR SODIUM HYDROXIDE BEFORE DISPOSAL TO DRAIN. FULLY BIODEGRADABLE.
WATER SOLUBLE. DRY WASTE PRODUCTS LANDFILL OR INCINERATE.
DISPOSE OF IN A MANNER CONSISTENT WITH LOCAL REGULATIONS.

14. TRANSPORT INFORMATIONAL

GGVE/GGVS: CLASS -- NO. --
WARNING SIGN: HAZARD NO. --
SUBSTANCE NO. --
DECLARATION FOR LAND SHIPMENT: --
DECLARATION FOR SEA SHIPMENT: --
DECLARATION FOR SHIPMENT BY AIR: --

15. OTHER INFORMATION

NONE

Disclaimer

This information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Pestell Minerals & Ingredients makes no warranty of any kind, expressed or implied, concerning the safe use of this material in your process or in combination with any other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.