MATERIAL SAFETY DATA SHEET

REF: 91/155/EEC AND AMENDMENTS WITH RESPECTIVE NATIONAL IMPLEMENTATIONS

SODIUM CITRATE

1.0 SUBSTANCE IDENTIFICATION

1.1 Commercial product name: Sodium Citrate including anhydrous, dehydrate etc
1.2 Chemical characterisation: Trisodium salt of 2-hydroxypropane-1,2,3, tricarboxylate

1.3 Formula:
1.4 Molecular weight: approx 258 - 294
1.5 CAS No: 6132-04-3
1.6 EINECS No.: 200-675-3
1.7 **FOR USE IN FOOD as a food aditive**
1.8 Manufactured by: SR FILTER AIDS SUPPLIERS, Tilak Bazar, Delhi - 110006, INDIA

2.0 COMPOSITION

2.1 Totally 100% sodium citrate
2.2 Volatile matter 6-12 % maximum after drying for 4 hours at 180°C
2.3 Sodium ion content typically 23 - 24%

3.0 HAZARDS IDENTIFICATION

3.1 Sodium citrate is not classified as a Dangerous Substance within the definitions of EC Directive 67/584
3.2 Contact with eyes (e.g. dust particles) may cause irritation.

4.0 FIRST AID MEASURES

4.1 Flush affected parts with plenty of water

5.0 FIRE FIGHTING MEASURES

5.1 All types of fire extinguisher are suitable
5.2 Firefighters wear protective clothing and NIOSH approved respirator

6.0 ACCIDENTAL RELEASE MEASURES

6.1 After spillage/leakage : Recover by vacuum, or broom and shovel. Flush area with water to remove final traces.

7.0 HANDLING AND STORAGE

7.1 Store in tightly closed containers, away from extreme heat and humidity. Maximum 25°C and 50% relative humidity.
7.2 Industrial Hygiene: Good ventilation required if process creates the formation of dust.

8.0 EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Personal precautions: Avoid breathing dust.
Avoid contact with eyes.
8.2 Respiratory protection: Approved nuisance dust mask
8.3 Hand protection: Standard work gloves
8.4 Eye protection: Goggles or safety glasses

9.0 PHYSICAL AND CHEMICAL PROPERTIES

9.1 Appearance: Crystals
9.2 Colour: Colourless
9.3 Odour: Odourless
9.4 Molecular weight: 258 - 294
9.5 Change in physical state: Loss of water above 180°C, with decomposition
9.6 Specific gravity Bulk density: 1.97 920-1150 kg/m_3 (typical range)

9.8 Vapour pressure: N/A - solid
9.9 Viscosity: N/A - solid
9.10 Solubility - in water (25°C) 40 - 60% w/w
- in ethanol (25°C) Insoluble
9.11 pH (5% solution) (25°C) 7 - 9
9.12 Flash point N/A
9.13 Explosive properties N/A
9.14 Flammability: Requires external heat to burn
9.12 Thermal decomposition: Above 230°C may evolve carbon monoxide and carbon dioxide

10.0 STABILITY AND REACTIVITY

10.1 Shelf life : Sodium citrate is chemically stable if stored under cool, dry conditions; 25°C maximum and 50% relative humidity. It deliquesces in moist air. Physical properties may change on storage: re-test recommended periodically based on actual storage conditions.

10.4 Reactivity: Sodium citrate is a neutral salt with low activity.

11.0 TOXICOLOGICAL INFORMATION

11.1 LD_{50} (dog): Not available

12.0 ECOLOGICAL INFORMATION

12.1 Not Available
12.2 Not AVailable

13.0 DISPOSAL CONSIDERATIONS

13.1 Sodium citrate is suitable for landfill or disposal to sewer **depending upon local regulations.**

14.0 TRANSPORT INFORMATION

14.1 No special considerations

15.0 REGULATORY INFORMATION

15.1 Sodium citrate is an EU permitted Food Additive (E 332). Conditions of use: Quantum Satis. The US Food and Drug Administration classifies potassium citrate as a GRAS (Generally Recognised As Safe) food ingredient.

15.2 According to the Joint Expert Committee on Food Additives of WHO/FAO potassium Citrate may be used without limitation according to Good Manufacturing Practices.