1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product Name: Sodium Citrate Dihydrate

Contact Manufacturer: Archer Daniels Midland Company
4666 Faries Parkway
Decatur, IL 62526, USA
Telephone Number: (+1) 217-424-5200

Use of the Substance / Preparation: Food additive / Industrial use

2. HAZARDS IDENTIFICATION

Classification according to 29 CFR 1910, amended to conform to the United Nations' Globally Harmonized System of Classification and Labelling of Chemicals (GHS):

OSHA Defined Hazard(s): Combustible Dust

OSHA / GHS Label Elements

Signal Word: Warning
Hazard Statement(s): May form combustible dust concentrations in air.

Up to 0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.
Up to 0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.
Up to 100 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS-No</th>
<th>Weight %</th>
<th>North American Hazard Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td>6132-04-3</td>
<td>100</td>
<td>None known.</td>
</tr>
</tbody>
</table>
4. FIRST AID MEASURES

Description of first aid measures
Eye Contact Rinse thoroughly with plenty of water, also under the eyelids.
Skin Contact Wash off with warm water and soap.
Inhalation Move to fresh air.
Ingestion Clean mouth with water and afterwards drink plenty of water.
General Advice When symptoms persist or in all cases of doubt seek medical advice.

Most important symptoms and affects, both acute and delayed
Eyes Contact with eyes may cause mechanical irritation.
Skin Product dust may cause mild, mechanical irritation.
Inhalation Dust may cause irritation of respiratory tract. See section 8 of this sheet for exposure limits pertaining to nuisance dust or "particulates not otherwise regulated".
Ingestion Health injuries are not known or expected under normal use.

Indication of any immediate medical attention and special treatment needed
Notes to Physician Special forms of treatment and immediate medical attention are not specified. Treat Symptomatically.

5. FIRE-FIGHTING MEASURES

Flammable Properties
As with most organic solids, combustion is possible at elevated temperatures or by contact with an ignition source. Fine dust dispersed in air may ignite. Risk of ignition followed by flame propagation or secondary explosions should be prevented by avoiding accumulation of dust, e.g. on floors and ledges.

Extinguishing media
Suitable Extinguishing Media Water. Carbon dioxide (CO₂). Foam. Dry powder. Dry chemical. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media No information available.

Special hazards arising from the substance or mixture
Hazardous Combustion Products Carbon monoxide (CO), Carbon dioxide (CO₂).
Specific Hazards Arising from the Chemical None known.
Sensitivity to mechanical impact No information available.
Sensitivity to static discharge Yes. (as dust).

Advice for fire-fighters
Protective Equipment and Precautions for Firefighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA
Health 0 Stability and Reactivity 0
Flammability 1 Physical hazard None known

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures
Ensure adequate ventilation. Avoid dust formation. Avoid sparks, flames, static electricity discharges, etc. in the presence of dust.

Environmental Precautions
Prevent further leakage or spillage if safe to do so.

Methods for Containment
Keep in suitable, closed containers for disposal.

Methods and Materials for Containment and Cleaning Up
Shovel or sweep up. Avoid dust formation. After cleaning, flush away traces with water.
7. HANDLING AND STORAGE

Handling
Ensure adequate ventilation. Avoid dust formation in confined areas. Fine dust dispersed in air may ignite. Refer to NFPA 61, “Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities”.

Storage
Keep in a dry, cool and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits
Where there is airborne dust, exposure limits pertaining to ‘particulates not otherwise regulated’ have been given

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>Mexico</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Particulates not otherwise regulated</td>
<td>TWA: 10 mg/m$^3$ inhalable particles, recommended TWA: 3 mg/m$^3$ respirable particles, recommended</td>
<td>TWA: 15 mg/m$^3$ total dust TWA: 5 mg/m$^3$ respirable fraction</td>
<td>not listed</td>
<td>not listed</td>
</tr>
</tbody>
</table>

Appropriate Engineering Controls
Ensure adequate ventilation, especially in confined areas.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice.

Personal Protective Equipment

Eye/face Protection
Safety glasses with side-shields. If airborne dust concentrations are excessive, wear goggles.

Skin and Body Protection
Protective clothing and gloves may be worn to reduce the potential of mechanical irritation.

Respiratory Protection
In case of insufficient ventilation wear suitable respiratory equipment.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance
Colorless to White

Physical State
Powder / Crystalline Granules

Odor
Odorless

Odor Threshold
No information available

pH
approx 8.0

Flash Point
Not applicable (solid)

Autoignition Temperature
No information available

Boiling point
Not applicable

Melting/Freezing Point
Decomposes before melting

Decomposition temperature
No information available

Oxidizing Properties
No information available

Flammability Limits in Air
No information available

Explosion Limits
No information available

Water Solubility
(approx. 42%)

Solubility(ies)
Insoluble in: Alcohol.

Evaporation Rate
Not applicable

Vapor Pressure
Not applicable

Vapor Density
Not applicable

Viscosity (kinematic)
Not applicable

Partition Coefficient (n-octanol/water)
No information available
10. STABILITY AND REACTIVITY

Stability  Stable under normal conditions.
Possibility of Hazardous Reactions  None under normal processing.
Conditions to Avoid  Avoid dust formation.
Incompatible Materials  No materials to be especially mentioned.
Hazardous Decomposition Products  Thermal decomposition can lead to release of irritating gases and vapors. Carbon oxides.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects

<table>
<thead>
<tr>
<th>Acute toxicity</th>
<th>Based on available data, no evidence of acute toxicity.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Name</td>
<td>Weight %</td>
</tr>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td>100</td>
</tr>
<tr>
<td>Skin corrosion/irritation</td>
<td>Based on available data, not, or only slightly irritating.</td>
</tr>
<tr>
<td>Serious eye damage/eye irritation</td>
<td>Based on available data, no evidence of serious eye damage / irritation.</td>
</tr>
<tr>
<td>Respiratory or skin sensitisation</td>
<td>Based on available data, not expected to be a skin or respiratory sensitiser.</td>
</tr>
<tr>
<td>Germ cell mutagenicity</td>
<td>Based on available data, the classification criteria are not met.</td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Based on available data, no evidence of carcinogenicity. There are no known carcinogenic chemicals in this product.</td>
</tr>
<tr>
<td>Reproductive toxicity</td>
<td>Based on available data, no evidence of reproductive toxicity</td>
</tr>
<tr>
<td>STOT - single exposure</td>
<td>No evidence of toxicity.</td>
</tr>
<tr>
<td>STOT - repeated exposure</td>
<td>No evidence of toxicity.</td>
</tr>
<tr>
<td>Aspiration hazard</td>
<td>Based on available data, no known aspiration hazard.</td>
</tr>
</tbody>
</table>

Potential health effects

- **Eyes**: Contact with eyes may cause mechanical irritation.
- **Skin**: Product dust may cause mild, mechanical irritation.
- **Inhalation**: Dust may cause irritation of respiratory tract. See section 8 of this sheet for exposure limits pertaining to nuisance dust or "particulates not otherwise regulated".
- **Ingestion**: Health injuries are not known or expected under normal use.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Contains no substances known to be hazardous to the environment. Contains no substances known to be not degradable in waste water treatment plants.

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Fresh Water Algae</th>
<th>Acute Fish Toxicity</th>
<th>Daphnia (Water flea)</th>
<th>Effects on micro-organisms</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td></td>
<td>LC50 (48h) 440 mg/l (Leuciscus idus)(nominal)</td>
<td>LC50 (24h) 1535 mg/l (Daphnia magna)</td>
<td>EC50: 8h &gt;18000-32000 mg/L (Pseudomonas fluorescens)</td>
<td></td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Whenever possible, as rules and regulations allow, please recycle or manage materials to minimize waste.

Waste Disposal Methods
Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction. Can be landfilled or incinerated, when in compliance with local regulations.

Contaminated Packaging
Empty containers should be decontaminated and taken for local recycling, recovery or waste disposal.
14. TRANSPORT INFORMATION

**Domestic transport regulations (USA)**
DOT  Not regulated

**Domestic transport regulations (Canada)**
TDG  Not regulated

**Domestic transport regulations (Mexico)**
MEX  Not regulated

**International transport regulations**
ICAO  Not regulated
IATA  Not regulated
IMDG/IMO  Not regulated
15. Regulatory Information

International Inventories

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>AICS</th>
<th>ENCS/ISHL</th>
<th>CHINA</th>
<th>PICCS</th>
<th>KECL</th>
<th>NZIoC</th>
</tr>
</thead>
</table>

USA

Federal Regulations

Ozone Depleting Substances:
No Class I or Class II material is known to be used in the manufacture of, or contained in, this product.

SARA 313
Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 372.

CERCLA/SARA 103-302
Sections 103-302 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 103-302.

SARA 311/312 Hazardous Categorization

- Acute Health Hazard: No
- Chronic Health Hazard: No
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 63)
This product is not known to contain any HAPs.

State Regulations

State Right-to-Know
No known components subject to "Right-To-Know" legislation.

Canada

WHMIS Product Classification
Not a WHMIS controlled product.

WHMIS Ingredient Disclosure List IDL
No known component is listed on the WHMIS ingredients disclosure list.

(NPRI) Canadian National Pollutant Release Inventory
No known component is listed on NPRI.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

Mexico

Mexico - Grade
Slight risk, Grade 1
16. OTHER INFORMATION

Prepared By: ADM Specialty Food, Corn
Original Preparation Date: 02-Mar-2009
Revision Date: 10-Jun-2015
Revision Number: 5
Reason for revision: This data sheet contains changes from the previous version in section(s) 2, 9, 10. This version replaces all previous versions.

Abbreviations and acronyms
ACGIH TLV - American Conference of Governmental Industrial Hygienists Threshold Limit Values
AICS - Australian Inventory of Chemical Substances (Australia)
CAS - Chemical Abstract Service
CHINA - Chinese Inventory of Existing Chemical Substances (China)
DOT - U.S. Department of Transportation
DSL - Domestic Substance List (Canada)
EC50 - Half maximal effective concentration
EINECS - European Inventory of Existing Commercial Chemical Substances (EU)
ELINCS - European List of Notified Chemical Substances (EU)
ENCS - Existing and New Chemical Substances (Japan) / ISHL - Industrial Health and Safety Law (Japan)
GHS - Globally Harmonized System of Classification and Labelling of Chemicals
IATA - International Air Transport Association Dangerous Goods Regulations
ICAO - International Civil Aviation Organisation
IMDG - International Maritime Dangerous Goods Code
IMO - International Maritime Organization
KECL - Korean Existing and Evaluated Chemical Substances (Korea)
LC50 - Lethal concentration that produces fatalities in 50% of a given test population
LD50 - Median lethal dose of a given test population
MEXICO - Mexico Occupational Exposure Limits
NFPA - National Fire Protection Association
NDSL - Non Domestic Substances List (Canada)
NIOSH - National Institute of Occupational Safety and Health
NZIoC - New Zealand Inventory of Chemicals (New Zealand)
OSHA - Occupational Safety & Health Administration
OSHA PEL - Occupational Safety and Health Administration Permissible Exposure Limits
PICCS - Inventory of Chemicals and Chemical Substances (Philippines)
STOT - Specific Target Organ Toxicity
TDG - Transportation of Dangerous Goods (Transport Canada)
TSCA - Toxic Substances Control Act, Section 8(b) Inventory (USA)
TWA - Time Weighted Average: Average concentration that should not be exceeded during a work day (usually 8-hours)
WHMIS - Workplace Hazardous Materials Information System

The information provided on this (M)SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of sheet