

Citric Acid Anhydrous Fine Granular 51N**0432938**

Version 3.0

Revision Date 07/05/2010

Print Date 07/17/2010

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Citric Acid Anhydrous Fine Granular 51N
Product Use Description : Food additive
Ingredient for pharmaceutical products
Ingredient for personal care products

Company : S.A. Citrique Belge N.V.
Pastorijstraat 249
Tienen 3300

Telephone : +3216806211
Telefax : +3216806611
Emergency telephone : +32 16 80 66 69

SECTION 2. HAZARDS IDENTIFICATION**Emergency Overview****Warning**

Form: granular, powder, Colour: white, Odour: odourless

OSHA Hazards : MILD SKIN IRRITANT
SEVERE EYE IRRITANT

Potential Health Effects

Aggravated Medical Condition : Eyes
Eyes : Causes eye irritation.

Carcinogenicity:**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Additional hazards and advice

Risk of dust explosion.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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

Brief description of the : Substance

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product
Molecular formula : C₆H₈O₇

Hazardous components

Component	CAS-No.	Weight percent
citric acid	77-92-9	99.8 - 100

SECTION 4. FIRST AID MEASURES**First aid procedures**

- General advice : Move out of dangerous area.
Show this safety data sheet to the doctor in attendance.
- Inhalation : Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion.
If symptoms persist, call a physician.
- Skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
- Eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Protect unharmed eye.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.
- Ingestion : Rinse mouth with water and drink plenty of water afterwards.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
Obtain medical attention.

SECTION 5. FIRE-FIGHTING MEASURES**Flammable properties**

Flash point : ca. 653 °F (345 °C)

Fire fighting

Suitable extinguishing media : Water
Foam

Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Consider dust explosion hazard.

Protective equipment and precautions for firefighters

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Special protective equipment : In the event of fire, wear self-contained breathing apparatus.
for fire-fighters

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation.
- Environmental precautions : Try to prevent the material from entering drains or water courses.
No special environmental precautions required.
- Methods for containment /
Methods for cleaning up : Pick up and arrange disposal without creating dust.
Sweep up and shovel.

SECTION 7. HANDLING AND STORAGE**Handling**

- Handling : Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
- Advice on protection against
fire and explosion : Avoid dust formation.
Provide appropriate exhaust ventilation at places where dust is formed.
Take precautionary measures against static discharges.

Storage

- Requirements for storage : Keep container tightly closed and dry.
areas and containers
- Storage temperature : 50 - 86 °F (10 - 30 °C)
- Other data : No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Exposure Guidelines**

Contains no substances with occupational exposure limit values.

Engineering measures

For technical measures see section 7.

Personal protective equipment

- Eye protection : Safety glasses with side-shields
- Hand protection : Glove material: for example nitrile rubber

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	Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate type of protective gloves.
Skin and body protection	: Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Respiratory protection	: In the case of dust or aerosol formation use respirator with an approved filter.
Hygiene measures	: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	: granular, powder
Colour	: white
Odour	: odourless

Safety data

Flash point	: ca. 345 °C (closed cup)
Flammability (solid, gas)	: not highly flammable
Dust explosion class	: St(H)1 (Milled sample, Median value of the tested sample 0.027 mm, Loss on drying 0.2 %; The value was determined in the modified Hartmann tube.)
Minimum ignition temperature of a dust/air mix	: \geq 470 °C (Median value of the tested sample 0.027 mm) determined in the BAM oven
Powder volume resistivity	: ca. 2E+11 Ohmm (Test performed using a similar product., Median value of the tested sample 0.33 mm, Loss on drying 0.3 %) The material can accumulate static charge and can therefore cause electrical ignition.
Minimum ignition energy	: 100 - 300 mJ (Milled sample, Median value of the tested sample 0.027 mm, Loss on drying 0.2 %, EN 13821) The Minimum ignition energy (MIE) of a dust/air mix depends on the particle size the water content and the temperature of the dust. The finer and the dryer the dust the lower the MIE. : General remark: The indicated dust explosion characteristics are only valid for this product and are sensitive to the sample's parameters.
Autoignition temperature	: No self ignition observed in the Grewer oven at temperatures below melting point.
Molecular Weight	: 192.12 g/mol

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pH	:	ca. 1.8 (ca.50 g/l, 25 °C)
Dissociation constant	:	pKa 3.13 (25 °C)
	:	pKa 4.76 (25 °C)
	:	pKa 6.4 (25 °C)
Melting point/range	:	ca. 153 °C (OECD Test Guideline 102)
Boiling point/boiling range	:	> 175 °C Could not be determined due to decomposition.
Density	:	1.665 g/cm ³ (at 18 °C; OECD Test Guideline 109)
Water solubility	:	ca. 750 g/l (20 °C)
Partition coefficient: n-octanol/water	:	-1.72 (20 °C)
Solubility in other solvents	:	Ethanol: soluble Diethylether: slightly soluble Chloroform: insoluble

SECTION 10. STABILITY AND REACTIVITY

Conditions to avoid	:	Heat.
Materials to avoid	:	Strong acids and strong bases Strong oxidizing agents
Thermal decomposition	:	Decomposes on heating. Potential for exothermic hazard
Hazardous reactions	:	Dust may form explosive mixture in air. Stable under recommended storage conditions.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	:	LD50 (mouse): 5,400 mg/kg LD50 (rat): 3,000 mg/kg
Skin irritation	:	Mild skin irritation (rabbit, OECD Test Guideline 404, 72 h)
Eye irritation	:	Severe eye irritation (rabbit, OECD Test Guideline 405, 72 h)
Repeated dose toxicity	:	NOAEL (Oral, rat) : 1200 mg/kg/day Chronic toxicity study (2 years)
Carcinogenicity	:	Animal testing did not show any carcinogenic effects. (rat , oral)

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Genotoxicity in vitro	: not mutagenic (Ames test)
Genotoxicity in vivo	: not genotoxic (rat)
Reproductive toxicity	: No indication for adverse effects on fertility known.
Teratogenicity	: not teratogenic not embryotoxic (several species)
Further information	: May cause irritation of respiratory tract.

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity effects**

Toxicity to fish	: Leuciscus idus (Golden orfe) LC50 (96 h) > 440 - 760 mg/l
Toxicity to daphnia and other aquatic invertebrates.	: Daphnia magna (Water flea) EC50 (72 h) ca. 120 mg/l
Toxicity to algae	: Scenedesmus quadricauda (Green algae) EC0 (7 d) 640 mg/l
Toxicity to bacteria	: Pseudomonas putida EC50 > 10,000 mg/l

Elimination information (persistence and degradability)

Biodegradability	: Readily biodegradable. 98 % (2 d) (OECD Test Guideline 302B)
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SECTION 13. DISPOSAL CONSIDERATIONS

Further information	: Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging	: Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION**DOT**
Not dangerous goods**TDG**

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Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

RID

Not dangerous goods

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. REGULATORY INFORMATION

OSHA Hazards : Mild skin irritant, Severe eye irritant
SARA 311/312 Hazards : Acute Health Hazard

EPCRA - EMERGENCY PLANNING COMMUNITY RIGHT - TO - KNOW

SARA 302 Reportable Quantity : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Pennsylvania Right To Know Components : citric acid 77-92-9
New Jersey Right To Know Components : citric acid 77-92-9

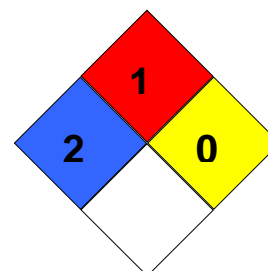
The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory
DSL : All components of this product are on the Canadian DSL list.

SECTION 16. OTHER INFORMATION**Further information**

HMIS Classification : Health hazard: 1
Flammability: 1
Physical hazards: 0

NFPA Classification : Health hazard: 2
Fire Hazard: 1
Reactivity Hazard: 0



The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as

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a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

E-mail address : sds.nutritionalproducts@dsm.com
Responsible/issuing person

Definitions: ACGIH = American Conference of Governmental Industrial Hygienists. CERCLA = Comprehensive Environmental Response, Compensation and Liability Act. CFR = Code of Federal Regulations. CPR = Controlled Products Regulations. DSL = Canadian Domestic Substance List. DOT = Department of Transportation. EINECS = European Inventory of New and Existing Chemical Substances. EPA = Environmental Protection Agency. HCS = Hazardous Communication Standard. HEPA = High Efficiency Particulate Air. HMIS = Hazardous Material Identification System. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IMDG = International Maritime Dangerous Good. NFPA = National Fire Protection Association. NIOSH = National Institute of Occupational Safety and Health. NJTSR = New Jersey Trade Secret Registry. NTP = National Toxicology Program. OSHA = Occupational Safety and Health Administration. SARA = Superfund Amendments and Reauthorization Act. TDG = Transportation of Dangerous Goods. TLV = Threshold Limit Value. TSCA = Toxic Substance Control Act. WHMIS = Workplace Hazardous Materials Information System.