

World Headquarters
Hach Company
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MSDS No: M00153

SAFETY DATA SHEET

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

Product Name: Buffer Powder Pillows Citrate Type for Heavy Metals
Catalog Number: 1420299

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49 -(0)211 -5288

Emergency Telephone Numbers:
(Poison Information Center Main)
(+49 (0) 6131 19240) 24 HR

SDS Number: M00153

Chemical Name: Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

Use of the substance/preparation: Buffer

CAS No.: Not applicable

Hazard: Causes irritation. Experimental carcinogen. May cause allergic reaction.

Date of MSDS Preparation:

Day: 23

Month: 10

Year: 2006

Additional Emergency Response Numbers: Austria: +49 (0)6131 19240, Belgium: +32 -(0)70 -245245, France: +33 (0)1 -40370404, Italy: +39 -0266101029, Netherlands: +31 -(0)30 -2748888, Switzerland: +41 -(0)1 -2515151

2. COMPOSITION / INFORMATION ON INGREDIENTS

Sodium Citrate

EEC Number: 2006753

CAS No.: ~~6802~~

Percent Range: 10,0 - 20,0

Percent Range Units: weight / weight

Ingredient EEC Symbol: Not applicable

Ingredient R phrase(s) (R phrase details given in Heading 16): Not applicable

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

Hydrazine Sulfate

EEC Number: 2331104

CAS No.: 10034 -93 -2

Percent Range: 10,0 - 20,0

Percent Range Units: weight / weight

Ingredient EEC Symbol: T - TOXIC

Ingredient R phrase(s) (R phrase details given in Heading 16): R 2 0/21/22 R 43 R 45

TLV: 0,1 ppm (N₂H₄)

PEL: 0,1 ppm as N₂H₄

EU Occupational Exposure Limits: None found. 3 mg/m³ Inhalable dust. For Hydrazine: 0,1 ppm (0,13 mg/m³).

Citric Acid

EEC Number: 2010691

CAS No.: ~~7792~~

Percent Range: 65,0 - 75,0

Percent Range Units: weight / weight
Ingredient EEC Symbol: Xi - IRRITATING
Ingredient R phrase(s) (R phrase details given in Heading 16): R 36
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: White powder

Odor: Odorless

EU Symbols: T - TOXIC N - DANGEROUS FOR THE ENVIRONMENT

R PHRASES: R 45 -20/21/22: May cause cancer. Also harmful by inhalation, in contact with skin and if swallowed. R 36: Irritating to eyes. R 43: May cause sensitization by skin contact. R 51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Protective Equipment:

Potential Health Effects:

Eye Contact (EC): Causes irritation

Skin Contact (EC): May cause allergic reaction May cause irritation

Skin Absorption (EC): Harmful if absorbed through the skin

Target Organs (SA E): Central nervous system

Ingestion (EC): Harmful May cause: gastrointestinal disturbances central nervous system effects

Target Organs (Ing E): Central nervous system

Inhalation: Harmful May cause: respiratory tract irritation central nervous system effects

Target Organs (Inh E): Central nervous system

Medical Conditions Aggravated: Pre-existing: Eye conditions Skin conditions Respiratory conditions Central nervous system diseases Liver conditions Kidney conditions

Chronic Effects: Citric acid chronic overexposure may cause effects due to the ability of citric acid to chelate metals, which could impair the body's ability to absorb calcium and iron. Chronic overexposure may cause cancer liver damage adverse effects to the blood lung damage kidney damage

Cancer / Reproductive Toxicity Information:

An ingredient of this mixture is: IARC Group 2B: Experimental Carcinogen
Hydrazine Sulfate

Addit ional Cancer / Reproductive Toxicity Information: Contains: an experimental mutagen.

Toxicologically Synergistic Products: None reported

4. FIRST AID MEASURES

Eye Contact: Immediately flush eyes with water for 15 minutes. Call physician.

Skin Contact (First Aid): Wash skin with plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

Ingestion (First Aid): Induce vomiting using syrup of ipecac or by sticking finger down throat. Never give anything by mouth to an unconscious person. Call physician immediately.

Inhalation: Remove to fresh air. Give artificial respiration if necessary. Call physician.

5. FIRE FIGHTING MEASURES

Flammable Properties: Can burn in fire, releasing toxic vapors.

Hazardous Combustion Products: Toxic fumes of: nitrogen oxides, carbon monoxide, carbon dioxide, sulfur oxides, ammonia

Fire / Explosion Hazards: May react violently with: strong oxidizers metal nitrates

Static Discharge: None reported.

Mechanical Impact: None reported

Extinguishing Media: Use media appropriate to surrounding fire conditions

Extinguishing Media NOT To Be Used: Not applicable

Fire Fighting Instruction: As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Spill Response Notice:

Only persons properly qualified to respond to an emergency involving hazardous substances should respond to a spill involving chemicals. See Section 13, Special Instructions for disposal assistance.

Containment Technique: Stop spilled material from being released to the environment.

Clean-up Technique: Scoop up spilled material into a large beaker and dissolve with water. Work in an approved fume hood. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a soap solution.

Evacuation Procedure: Evacuate local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled. If conditions warrant, increase the size of the evacuation.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes skin clothing Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

Storage: Protect from: heat Keep away from: oxidizers

Special Packaging Instructions: Not applicable

Use of the substance/preparation: Buffer

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Have an eyewash station nearby. Maintain general industrial hygiene practices when using this product.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin / Hand Protection: disposable latex gloves lab coat

Inhalation Protection: adequate ventilation

Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling.

Protect from: heat Keep away from: oxidizers Use with adequate ventilation.

TLV: Not established

PEL: Not established

EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: White powder

Physical State: Solid

Odor: Odorless

pH: 1% solution = 2,4

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Boiling Point: Not applicable

Melting Point: 153°C; 307°F

Flash Point: Not applicable

Method: Not applicable

Autoignition Temperature: Not available

Flammability Limits:

Lower Explosion Limits: Not applicable

Upper Explosion Limits: Not applicable

Specific Gravity (water = 1): 1,74

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not applicable

Partition Coefficient (n-octanol / water): Not applicable

Solubility:

Water: Soluble

Acid: Soluble

Other: Not determined

Metal Corrosivity:

Steel: 0,23 in/yr

Aluminum: 0,005 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Heat Excess moisture

Reactivity / Incompatibility: Incompatible with: oxidizers metal nitrates metal nitrites

Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides carbon dioxide carbon monoxide sulfur oxides ammonia

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Product Toxicological Data:

LD50: None reported

LC50: None reported

Dermal Toxicity Data: None reported

Skin and Eye Irritation Data: Citric Acid: Eye rabbit 750 µg/24H - SEVERE, Skin rabbit 500 mg /24H - MODERATE;

Hydrazine Sulfate: Eye rabbit 20 mg/24H - MODERATE

Mutation Data: Hydrazine Sulfate: Sister Chromatid Exchange - hamster - lung - 100 nmol/l; DNA inhibition - mouse - intraperitoneal - 180 mg/kg; More data available in RTECS

Reproductive Effects Data: None reported

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Ingredient Toxicological Data: Hydrazine Sulfate: Oral rat LD50 = 601 mg/kg; Citric Acid: Oral rat LD50 = 6730 mg/kg;

Sodium Citrate: Oral rat LD50 > 8 g/kg

An ingredient of this mixture is: IARC Group 2B: Experimental Carcinogen

Hydrazine Sulfate

12. ECOLOGICAL INFORMATION

Product Ecological Information: --

No ecological data available for this product.

Ingredient Ecological Information: --

No ecological data available for the ingredients of this product.

13. DISPOSAL CONSIDERATIONS

NOTICE (Disposal): These disposal guidelines are based on federal regulations and may be superseded by more stringent state or local requirements. Please consult your local environmental regulators for more information. In Europe: Chemical and analysis solutions must be disposed of in compliance with the respective national regulations. Product packaging must be disposed of in compliance with the country-specific regulations or must be passed to a packaging return system.

14. TRANSPORT INFORMATION

I.C.A.O.:

I.C.A.O. Proper Shipping Name: Not Currently Regulated

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ICAO Hazard Class: NA

ICAO Subsidiary Risk: NA

ICAO UN/ID Number: NA

ICAO Packing Group: NA

I.M.O.:

I.M.O. Proper Shipping Name: Not Currently Regulated

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I.M.O. Hazard Class: NA

I.M.O. Subsidiary Risk: NA

I.M.O. UN Number: NA

I.M.O. Packing Group: NA

A.D.R.:

A.D.R. Proper Shipping Name: Environmentally Hazardous Substance, Solid, nos

(Hydrazine sulfate)

A.D.R Hazard Class: 9

A.D.R. Subsidiary Risk: NA

A.D.R. UN -Number::

A.D.R. Packing Group: III

Additional Information: This product may be shipped as part of a chemical kit composed of various compatible dangerous goods for analytical or testing purposes. This kit would have the following classification: Proper Shipping Name: Chemical Kit Hazard Class: 9 UN Number 3316 ALSO NOTE: If the National Competent Authority declares this product an environmental hazard by Special Provision 909 (IMDG) and Special Provision A97 (IATA) the classification may be UN3077 or UN3082.

15. REGULATORY INFORMATION

National Inventories:

EEC Inventory Status: All ingredients used to make this product are listed on EINECS / ELINCS.

EEC Number: Not applicable

EEC LABEL COPY:

EU Symbols: T - TOXIC N - DANGEROUS FOR THE ENVIRONMENT

R PHRASES: R 45 -20/21/22: May cause cancer. Also harmful by inhalation, in contact with skin and if swallowed. R 36: Irritating to eyes. R 43: May cause sensitization by skin contact. R 51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S PHRASES: S 53: Avoid exposure - obtain special instructions before use. S 24/25: Avoid contact with skin and eyes.

S 35: This material and its container must be disposed of in a safe way. S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Ingredients: Hydrazine Sulfate; Citric Acid;

16. OTHER INFORMATION

References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332 -2983. TLV's Threshold Limit Values and Biological Exposure Indices for 1992 -1993. American Conference of Governmental Industrial Hygienists, 1992. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1 -42) Supplement 7. France: 1987. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. Sixth Annual Report on Carcinogens, 1991. U.S. Department of Health and Human Services. Rockville, MD: Technical Resources, Inc. 1991. In-house information. Technical Judgment.

R PHRASES: R 45 -20/21/22: May cause cancer. Also harmful by inhalation, in contact with skin and if swallowed. R 36: Irritating to eyes. R 43: May cause sensitization by skin contact. R 51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Use of the substance/preparation: Buffer

Revision Summary: Updates in Section(s) 14,

Legend:

NA - Not Applicable	w/w - weight/weight
ND - Not Determined	w/v - weight/volume
NV - Not Available	v/v - volume/volume

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

THE INFORMATION CONTAINED HEREIN IS BASED ON DATA CONSIDERED TO BE ACCURATE. HOWEVER, NO WARRANTY IS EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF.

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