

World Headquarters
Hach Company
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MSDS No: M00164

SAFETY DATA SHEET

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

Product Name: NitraVer® 5 Nitrate Reagent
Catalog Number: 2511025

HACH LANGE GmbH
Willstätterstrasse 11
40549 Düsseldorf, Germany
+49-(0)211-52880

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

SDS Number: M00164

Chemical Name: Not applicable

Chemical Formula: Not applicable

Chemical Family: Not applicable

Use of the substance/preparation: Determination of nitrate

CAS No.: Not applicable

Hazard: Toxic. Recognized carcinogen. Cumulative poison. Experimental teratogen. May cause irritation.

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

Potassium Phosphate

EEC Number: 2319134

CAS No.: 777870

Percent Range: 30,0 - 40,0

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

Other components, each

EEC Number: Not applicable

CAS No.: Not applicable

Percent Range: < 1,0

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: Not established

Cadmium

EEC Number: 2311528

CAS No.: 7440439

Percent Range: 5,0 - 10,0

Percent Range Units: weight / weight

Ingredient EEC Symbol: T+ - VERY TOXIC N - Dangerous for the Environment
Ingredient R phrase(s) (R phrase details given in Heading 16): R 45 R 26 R 48/23 R 25 R 62 R 63 R 68 R 50/53
TLV: 0,01 mg/m³
PEL: 0,005 mg/m³
EU Occupational Exposure Limits: 0,015 mg Cd/m³ as dust, aerosol

Gentisic Acid

EEC Number: 2077185
CAS No.: 490-79-9
Percent Range: 5,0 - 15,0
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

Magnesium Sulfate

EEC Number: 2312982
CAS No.: 10034-99-8
Percent Range: 5,0 - 15,0
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

Sulfanilic Acid

EEC Number: 2044825
CAS No.: 121-57-3
Percent Range: 30,0 - 40,0
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

3. HAZARDS IDENTIFICATION

Emergency Overview:

Appearance: Gray powder

Odor: None

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

R PHRASES: R 45: May cause cancer. R 26: Very toxic by inhalation. R 36/38: Irritating to eyes and skin. R 43: May cause sensitization by skin contact. R 48/20/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. R 62: Possible risk of impaired fertility. R 63: Possible risk of harm to the unborn child. R 68: Possible risk of irreversible effects. 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): May cause irritation

Skin Contact (EC): May cause irritation

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

Target Organs (SA E): None Reported

Ingestion (EC): Harmful May cause: salivation vomiting abdominal pain anemia diarrhea kidney failure central nervous system effects

Target Organs (Ing E): Kidneys Reproductive system Central nervous system

Inhalation: Harmful May cause: coughing headache nausea vomiting chest pain pneumonitis respiratory tract irritation lung damage kidney damage

Target Organs (Inh E): Kidneys Reproductive system Lungs

Medical Conditions Aggravated: Pre-existing: Respiratory conditions Kidney conditions

Chronic Effects: Chronic overexposure may cause cancer kidney damage liver damage bone damage (osteosclerosis)

Cancer / Reproductive Toxicity Information:

An ingredient of this mixture is: IARC Group 2A: Suspected Carcinogen

Cadmium

Additional Cancer / Reproductive Toxicity Information: Contains: an experimental teratogen. In laboratory tests, when magnesium sulfate was given to pregnant rats, a sharp reduction of both the number and the weight of the offspring was observed.

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 soap and plenty of water. Call physician if irritation develops.

Ingestion (First Aid): Administer milk or beaten egg whites at frequent intervals. 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: cadmium oxide sulfur oxides. phosphorus oxides carbon monoxide, carbon dioxide.

Fire / Explosion Hazards: None reported

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. Releases of this material may contaminate the environment.

Clean-up Technique: Avoid breathing spilled material. Sweep up material. Incinerate material at an E.P.A. approved hazardous waste facility. Decontaminate the area of the spill with a soap solution.

Evacuation Procedure: Evacuate general area (50 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. Use with adequate ventilation.

Storage: Protect from: moisture Keep away from: oxidizers powdered metals hydrazoic acid

Special Packaging Instructions: Not applicable

Use of the substance/preparation: Determination of nitrate

8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

Engineering Controls: Use a fume hood to avoid exposure to dust, mist or vapor. Have an eyewash station nearby.

Personal Protective Equipment:

Eye Protection: safety glasses with top and side shields

Skin / Hand Protection: disposable latex gloves lab coat

Inhalation Protection: laboratory fume hood
Precautionary Measures: Avoid contact with: eyes skin clothing Do not breathe: dust Wash thoroughly after handling.
Protect from: moisture Keep away from: oxidizers powdered metals
TLV: Not established
PEL: Not established
EU Occupational Exposure Limits: 3 mg/m³, Inhalable dust

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Gray powder
Physical State: Solid
Odor: None
pH: 5% solution = 2,7
Vapor Pressure: Not applicable
Vapor Density (air = 1): Not applicable
Boiling Point: Not applicable
Melting Point: 175°C; 347°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): 2,13
Evaporation Rate (water = 1): Not applicable
Volatile Organic Compounds Content: Not applicable
Partition Coefficient (n-octanol / water): Not applicable
Solubility:
Water: Slightly soluble
Acid: Slightly soluble
Other: Not determined
Metal Corrosivity:
Steel: 0,105 in/yr
Aluminum: 0,028 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.
Conditions to Avoid: Excess moisture
Reactivity / Incompatibility: Incompatible with: oxidizers powdered metals hydrazoic acid
Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides phosphorus oxides cadmium oxide carbon dioxide carbon monoxide
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: Sulfanilic acid: Skin rabbit - 500 mg/24H Standard Draize - MILD, Eye rabbit- 100 mg/24H Standard Draize - MODERATE
Mutation Data: Cadmium - Cytogenetic analysis - hamster ovary 1 µmol/l; Gentisic acid - DNA Inhibition - Human Lymphocytes 1 mmol/l
Reproductive Effects Data: Cadmium: Oral male rat TDLo = 155 mg/kg - 13 weeks pre-mating - effects on newborn growth and behavior; Oral female rat TDLo = 23 mg/kg - 1-22 days after conception - blood and lymphatic system abnormalities
Magnesium Sulfate: Intraperitoneal rat TDLo = 750 mg/kg (17-21D pregnant): TER Sharp reduction in both the number and weight of offspring was observed

Ingredient Toxicological Data: Cadmium: Oral rat LD50 = 225 mg/kg, Inhalation rat LC50 = 25 mg/m³/30 min; Sulfanilic acid Oral rat LD50 = 12300 mg/kg; Gentisic acid Oral rat LD50 = 800 mg/kg; Potassium Phosphate Monobasic Oral rat LD50 = 7100 mg/kg

An ingredient of this mixture is: IARC Group 2A: Suspected Carcinogen
Cadmium

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, Liquid, NOS (Di-N-Butyl Phthalate)

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A.D.R Hazard Class: 9

A.D.R. Subsidiary Risk: NA

A.D.R. UN-Number:: 30

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 or are placed on the market in quantities less than 10 kg per year.

EEC Number: Not applicable

EEC LABEL COPY:

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

R PHRASES: R 45: May cause cancer. R 26: Very toxic by inhalation. R 36/38: Irritating to eyes and skin. R 43: May cause sensitization by skin contact. R 48/20/22: Harmful: danger of serious damage to health by prolonged exposure

through inhalation and if swallowed. R 62: Possible risk of impaired fertility. R 63: Possible risk of harm to the unborn child. R 68: Possible risk of irreversible effects. 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: Avoid contact with skin. S 35: This material and its container must be disposed of in a safe way. S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Ingredients: Cadmium;

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. NIOSH/OSHA Occupational Health Guidelines for Chemical Hazards. Cincinnati: Department of Health and Human Services, 1981. 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. House information. Technical Judgment.

R PHRASES: R 45: May cause cancer. R 26: Very toxic by inhalation. R 36/38: Irritating to eyes and skin. R 43: May cause sensitization by skin contact. R 48/20/22: Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed. R 62: Possible risk of impaired fertility. R 63: Possible risk of harm to the unborn child. R 68: Possible risk of irreversible effects. R 51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Use of the substance/preparation: Determination of nitrate

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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