

World Headquarters
Hach Company
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MSDS No: M00062

SAFETY DATA SHEET

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

Product Name: NitraVer ® 6 Nitrate Reagent
Catalog Number: 2107249

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: M00062

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. Causes eye burns. Cumulative poison. Recognized carcinogen. Experimental teratogen.

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 Pyrosulfate

EEC Number: 2322168

CAS No.: 7790627

Percent Range: 5,0 - 10,0

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

1,2-Cyclohexanediaminetetraacetic Acid Trisodium Salt

EEC Number: None

CAS No.: 36679 -96-6

Percent Range: 20,0 - 30,0

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

Potassium Phosphate, Monobasic

EEC Number: 2319134

CAS No.: 777870

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

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: 1,0 - 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

Sodium Sulfate

EEC Number: 2318209
CAS No.: 775826
Percent Range: 50,0 - 60,0
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: 1,0 - 10,0
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: Blue metallic powder

Odor: None

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

R PHRASES: R 45: May cause cancer. R 23: Toxic by inhalation. 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 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): Causes 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.

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 phosphorus oxides sulfur oxides.

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 contact with spilled material. Sweep up material. Dispose of material in 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 Store between 10° and 25°C.

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

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

TLV: Not established

PEL: Not established

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

9. PHYSICAL / CHEMICAL PROPERTIES

Appearance: Blue metallic powder

Physical State: Solid

Odor: None

pH: 5% solution = 4,2

Vapor Pressure: Not applicable

Vapor Density (air = 1): Not applicable

Boiling Point: Not applicable

Melting Point: decomposes > 200°C

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): 2,377

Evaporation Rate (water = 1): Not applicable

Volatile Organic Compounds Content: Not applicable

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

Solubility:

Water: Partially soluble

Acid: Partially soluble

Other: Not determined

Metal Corrosivity:

Steel: 0,026 in/yr

Aluminum: 0,017 in/yr

10. STABILITY / REACTIVITY

Chemical Stability: Stable when stored under proper conditions.

Conditions to Avoid: Excess moisture

Reactivity / Incompatibility: Incompatible with: hydrazoic acid oxidizers metals

Hazardous Decomposition: Heating to decomposition releases toxic and/or corrosive fumes of: sulfur oxides phosphorus oxides cadmium oxide

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: None reported

Mutation Data: Cadmium - Cytogenetic analysis - hamster ovary 1 µmol/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; Sodium Sulfate Oral mouse LD50 = 5989 mg/kg; Potassium Phosphate Monobasic Oral rat LD50 = 7100 mg/kg; Potassium Pyrosulfate Oral rat LD50 = 2340 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, Solid, nos
(Cadmium mixture)

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 A 97 (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 - TOXIC N - DANGEROUS FOR THE ENVIRONMENT

R PHRASES: R 45: May cause cancer. R 23: Toxic by inhalation. 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 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 22: Do not breathe dust. 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: Potassium Pyrosulfate; Cadmium;

16. OTHER INFORMATION

References: 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor). TLV's Threshold Limit Values and Biological Exposure Indices for 1992 -1993. American Conference of Governmental Industrial Hygienists, 1992. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332 -2983. 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. 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: May cause cancer. R 23: Toxic by inhalation. 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 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/p reparation: 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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