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MSDS No: M00388

## SAFETY DATA SHEET

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

**Product Name:** PAN Indicator Solution 0,1%  
**Catalog Number:** 2122426

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:** M00388  
**Chemical Name:** Not applicable  
**Chemical Formula:** Not applicable  
**Chemical Family:** Not applicable  
**Use of the substance/preparation:** Determination of manganese  
**CAS No.:** Not applicable  
**Hazard:** Toxic. May be embryotoxic. Causes severe eye irritation.  
**Date of MSDS Preparation:**  
**Day:** 22  
**Month:** August  
**Year:** 2006  
**Additional Emergency Response Numbers:** Austria: +49 (0)6131 19240, Belgium: +32 -(0)70 -245245,  
France: +33 -(0)1 -40370404, Italy: +39 -02-66101029, Netherlands: +31 -(0)30 -2748888, Switzerland: +41 -  
(0)1 -2515151

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### Octylphenoxypolyethoxethanol

**EEC Number:** 2645201  
**CAS No.:** 9036 -19-5  
**Percent Range:** 5,0 - 15,0  
**Percent Range Units:** weight / volume  
**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:** Glycol ethers are on the Priority List for OELs.

#### Demineralized Water

**EEC Number:** 2317912  
**CAS No.:** 7732 -18-5  
**Percent Range:** 35,0 - 45,0  
**Percent Range Units:** volume / volume  
**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

**Other component**

*EEC Number:* Not applicable

*CAS No.:* Not applicable

*Percent Range:* < 1,0

*Percent Range Units:* Not applicable

*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

**N,N-Dimethylformamide**

*EEC Number:* 2006795

*CAS No.:* 68-12-2

*Percent Range :* 25,0 - 35,0

*Percent Range Units:* volume / volume

*Ingredient EEC Symbol:* T - TOXIC

*Ingredient R phrase(s) (R phrase details given in Heading 16):* R 61 R 36

*TLV:* 10 ppm (skin)

*PEL:* 10 ppm (skin)

*EU Occupational Exposure Limits:* 10 ppm (30 mg/ m<sup>3</sup>)

**Ammonium Acetate**

*EEC Number:* 2111629

*CAS No.:* 631-61-8

*Percent Range:* 15,0 - 25,0

*Percent Range Units:* weight / volume

*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:* For ammonia g 20 ppm (14 mg/m<sup>3</sup>); STEL: 50 ppm (36 mg/m<sup>3</sup>)

Recommended.3 mg/m<sup>3</sup>, Inhalable dust.

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### 3. HAZARDS IDENTIFICATION

***Emergency Overview:***

*Appearance:* Clear, red -orange liquid

*Odor:* Ammonia

*EU Symbols:* T - TOXIC

*R PHRASES:* R 61: May cause harm to the unborn child. R 36: Irritating to eyes.

***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 May cause kidney damage May cause liver damage May cause nausea May cause vomiting

*Target Organs (SA E):* Kidneys Liver

*Ingestion (EC):* May cause: abdominal pain nausea vomiting diarrhea blood pressure problems kidney damage liver damage

*Target Organs (Ing E):* Kidneys Liver

**Inhalation:** Harmful Effects similar to those of ingestion. May cause: respiratory tract irritation  
**Target Organs (Inh E):** Liver Kidneys  
**Medical Conditions Aggravated:** Pre-existing: Liver conditions Kidney conditions  
**Chronic Effects:** Dimethylformamide is capable of producing cumulative systemic injury when repeatedly inhaled or absorbed through the skin. Chronic overexposure may cause kidney damage liver damage  
**Cancer / Reproductive Toxicity Information:**  
An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Dimethylformamide  
**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen. an experimental teratogen. In laboratory tests, application of DMF to the skin of pregnant rats caused fetal deaths when the dosages were close to the lethal dose level for the mother.  
**Toxicologically Synergistic Products:** Exposure to and/or consumption of alcohol may increase toxic effects of this product.

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#### 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):** Give a slurry of powdered activated charcoal. 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.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.  
**Hazardous Combustion Products:** Toxic fumes of: dimethylamine nitrogen oxides. carbon monoxide, carbon dioxide.  
**Fire / Explosion Hazards:** May react violently with: nitric acid metal nitrates strong oxidizers alkali metals  
**Static Discharge:** None reported.  
**Mechanical Impact:** None reported  
**Extinguishing Media:** Water. Alcohol foam. Dry chemical. Carbon dioxide  
**Extinguishing Media NOT To Be Used:** Not applicable Not applicable Not applicable Not applicable  
**Fire Fighting Instruction:** As in any fire, wear self-contained breathing apparatus pressure-demand and full protective gear.

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#### 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:** Releases of this material may contaminate the environment. Dike the material to create a barrier to combustibles.  
**Clean-up Technique:** Do not breathe the fumes. Cover with an inert material, such as sand. 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 local area (15 foot radius or as directed by your facility's emergency response plan) when: any quantity is spilled.

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#### 7. HANDLING AND STORAGE

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

**Storage:** Keep away from: acids oxidizers alkali metals halogens Store between 10° and 25°C. Protect from: heat

**Special Packaging Instructions:** Not applicable

**Use of the substance/preparation:** Determination of manganese

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Have a safety shower nearby. Maintain adequate ventilation to keep vapor level below TWA for chemicals in this product. Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** chemical splash goggles

**Skin / Hand Protection:** lab coat neoprene latex gloves

**Inhalation Protection:** laboratory fume hood

**Precautionary Measures:** Avoid contact with: eyes skin clothing Do not breathe: mist/vapor Wash thoroughly after handling. Protect from: heat Keep away from: acids/acid fumes alkali metals oxidizers

**TLV:** Not established

**PEL:** Not established

**EU Occupational Exposure Limits:** Not established

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, red -orange liquid

**Physical State:** Liquid

**Odor:** Ammonia

**pH:** 8,0

**Vapor Pressure:** Not available

**Vapor Density (air = 1):** Not available

**Boiling Point:** 101°C; 214°F

**Melting Point:** Not determined

**Flash Point:** >93°C; >200°F

**Method:** Closed cup

**Autoignition Temperature:** Not available

**Flammability Limits:**

**Lower Explosion Limits:** Not available

**Upper Explosion Limits:** Not available

**Specific Gravity (water = 1):** 1,044

**Evaporation Rate (water = 1):** 0,25

**Volatile Organic Compounds Content:** Not available

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

**Solubility:**

**Water:** Miscible

**Acid:** Miscible

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** Not determined

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## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.

**Conditions to Avoid:** Heat Heating to decomposition.

**Reactivity / Incompatibility:** Incompatible with: nitric acid metal nitrates halogens alkali metals oxidizers

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

**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** None reported

**LC50:** None reported

**Dermal Toxicity Data:** DMF Skin rabbit LD50 = 4720 mg/kg; Octylphenoxypolyethoxyethanol Skin rabbit LD50 > 3000 mg/kg

**Skin and Eye Irritation Data:** DMF: Skin human 100%/24H - Standard Draize Test - MILD, Eye rabbit 100 mg - Rinsed Draize Test - SEVERE; Octylphenoxypolyethoxyethanol: Eye rabbit 1% SEVERE

**Mutation Data:** DMF: Cytogenetic analysis - human - inhalation - 12300 µg/m<sup>3</sup>/Y; Cytogenetic analysis - human lymphocytes - 100 nmol/l; Octylphenoxypolyethoxyethanol: DNA inhibition - human lymphocytes 5 ppm

**Reproductive Effects Data:** DMF: Inhalation rat TClO = 4 mg/m<sup>3</sup>/4H 1 -19 days after conception - Pre - implantation mortality, fetotoxicity, embryo death

DMF: Skin rat TDL<sub>0</sub> = 7552 mg/kg 6 -15 days after conception - fetotoxicity; oral mouse TDL<sub>0</sub> = 1820 mg/kg 6 -15 days after conception - fetotoxicity

**Ingredient Toxicological Data:** DMF: Oral rat LD50 = 2800 mg/kg; Inhalation mouse LC50 = 9400 mg/m<sup>3</sup>/2H; Octylphenoxypolyethoxyethanol: Oral rat LD50 = 1800 mg/kg

An ingredient of this mixture is: IARC Group 3: Non -classifiable  
Dimethylformamide

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** No product ecological information available.

**Ingredient Ecological Information:** Octylphenoxypolyethoxyethanol - Bluegill sunfish (*Lepomis macrochirus*), 96 hour dynamic: > 10 mg/l

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## 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.

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## 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:** Not Currently Regulated  
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**A.D.R Hazard Class:** NA  
**A.D.R. Subsidiary Risk:** NA  
**A.D.R. UN -Number::** NA  
**A.D.R. Packing Group:** NA  
**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

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## 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  
**R PHRASES:** R 61: May cause harm to the unborn child. R 36: Irritating to eyes.  
**S PHRASES:** S 53: Avoid exposure - obtain special instructions before use. S 45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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## 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. CCINFO R TECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. 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. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Vendor Information. In-house information. Technical Judgment.  
**R PHRASES:** R 61: May cause harm to the unborn child. R 36: Irritating to eyes.  
**Use of the substance/preparation:** Determination of manganese  
**Revision Summary:** Updates in Section(s) 14,

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### 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.**