

# Safety Data Sheet

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

**Product Name:** Dissolved Oxygen Reagent, High Range  
**Catalog Number:** 2515025

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:** M00537

**Chemical Name:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

**Use of the substance/preparation:** Determination of dissolved oxygen

**CAS No.:** Not applicable

**Hazard:** Toxic. Causes irritation. May cause allergic reaction.

**Date of MSDS Preparation:**

**Day:** 10

**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 -026101029, Netherlands: +31 -(0)30 -2748888, Switzerland: +41 -(0)1 -2515151

## 2. COMPOSITION / INFORMATION ON INGREDIENTS

### L-Lysine

**EEC Number:** 2002942

**CAS No.:** 5671

**Percent Range:** 40,0 - 50,0

**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/m<sup>3</sup>, Inhalable dust

### Hydroquinone

**EEC Number:** 2046178

**CAS No.:** 123 -31 -9

**Percent Range :** 1,0 - 10,0

**Percent Range Units:** weight / weight

**Ingredient EEC Symbol:** Xn - HARMFUL N - Dangerous for the Environment

**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 22 R 40 R 41 R 43 R 50 R 68

**TLV:** 2 mg/m<sup>3</sup>

**PEL:** 2 mg/m<sup>3</sup>

**EU Occupational Exposure Limits:** 10 ppm (45 mg/m<sup>3</sup>)

### Other component

**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

**EDTA Tetrasodium Salt**

**EEC Number:** 2005739  
**CAS No.:** 6408  
**Percent Range:** 45,0 - 55,0  
**Percent Range Units:** weight / weight  
**Ingredient EEC Symbol:** Xn - HARMFUL  
**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 40 R 36/37/38  
**TLV:** Not established  
**PEL:** Not established  
**EU Occupational Exposure Limits:** 3 mg/m<sup>3</sup>, Inhalable dust

**alpha -(dionylphenyl) -omega -hydroxy -poly(oxy -1,2-ethanediyl)**

**EEC Number:** Not applicable  
**CAS No.:** 901493  
**Percent Range:** 1,0 - 5,0  
**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:** Glycol ethers are on the Priority List for OELs.

---

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** White powder  
**Odor:** Irritating  
**EU Symbols:** Xn - HARMFUL N - DANGEROUS FOR THE ENVIRONMENT  
**R PHRASES:** R 36/37/38: Irritating to eyes, respiratory system and skin. R 40: Limited evidence of a carcinogenic effect. R 43: May cause sensitization by skin contact. R 51: Toxic to aquatic organisms. R 68: Possible risk of irreversible effects.

**Protective Equipment:**

**Potential Health Effects:**

**Eye Contact (EC):** Causes irritation  
**Skin Contact (EC):** May cause irritation  
**Skin Absorption (EC):** Effects similar to those of ingestion  
**Target Organs (SA E):** Central nervous system Kidneys Liver Blood  
**Ingestion (EC):** May cause: abdominal pain diarrhea nausea vomiting muscular twitching dizziness thirst stupor ringing in the ears (tinnitus) rapid pulse and respirations blood pressure problems headache cyanosis ( a reduction of the blood's ability to carry oxygen, giving a bluish discoloration) collapse calcium deficiency in the blood death  
**Target Organs (Ing E):** Central nervous system Kidneys Liver Blood  
**Inhalation:** May cause: respiratory tract irritation pneumonitis  
**Target Organs (Inh E):** None Reported  
**Medical Conditions Aggravated:** Allergies or sensitivity to hydroquinone. Pre-existing: Eye conditions Skin conditions Respiratory conditions Central nervous system diseases Kidney conditions  
**Chronic Effects:** Chronic overexposure may cause allergic skin reactions symptoms similar to acute exposure.  
**Cancer / Reproductive Toxicity Information:**  
An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Hydroquinone  
**Additional 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 soap and plenty of water. Call physician if irritation develops.  
**Ingestion (First Aid):** Give large quantities of water. 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.  
**Fire / Explosion Hazards:** May react violently with: strong oxidizers  
**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. Adjust to a pH between 6 and 9 with an acid, such as sulfuric or citric. Flush reacted material to the drain with a large excess of water. Decontaminate the area of the spill with a weak acid 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. Do not breathe dust. Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.  
**Storage:** Protect from: heat, moisture. Keep away from: oxidizers  
**Special Packaging Instructions:** Not applicable  
**Use of the substance/preparation:** Determination of dissolved oxygen

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station 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:** 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. Do not breathe: dust. Wash thoroughly after handling. Protect from: heat, moisture. Keep away from: oxidizers  
**TLV:** Not established  
**PEL:** Not established  
**EU Occupational Exposure Limits:** 3 mg/m<sup>3</sup>, Inhalable dust

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** White powder  
**Physical State:** Solid  
**Odor:** Irritating  
**pH:** 5% solution = 10,3  
**Vapor Pressure:** Not applicable  
**Vapor Density (air = 1):** Not applicable

**Boiling Point:** Not applicable  
**Melting Point:** 65°C; 149°F  
**Flash Point:** Not applicable  
**Method:** Not applicable  
**Autoignition Temperature:** Not applicable  
**Flammability Limits:**  
**Lower Explosion Limits:** Not applicable  
**Upper Explosion Limits:** Not applicable  
**Specific Gravity (water = 1):** 1,45  
**Evaporation Rate (water = 1):** Not applicable  
**Volatile Organic Compounds Content:** Not available  
**Partition Coefficient (n -octanol / water):** Not applicable  
**Solubility:**  
**Water:** Soluble  
**Acid:** Slightly soluble  
**Other:** Not determined  
**Metal Corrosivity:**  
**Steel:** 0,056 in/yr  
**Aluminum:** 0,180 in/yr

---

## 10. STABILITY / REACTIVITY

**Chemical Stability:** Stable when stored under proper conditions.  
**Conditions to Avoid:** Excess moisture Heat  
**Reactivity / Incompatibility:** Incompatible with: oxidizers  
**Hazardous Decomposition:** Heating to decomposition releases toxic and/or corrosive fumes of: nitrogen oxides carbon dioxide carbon monoxide  
**Hazardous Polymerization:** Will not occur.

---

## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** None reported

**LC50:** None reported

**Dermal Toxicity Data:** Hydroquinone Skin mammal LD50 = 5970 mg/kg

**Skin and Eye Irritation Data:** Hydroquinone: Skin human - 5% - Standard Draize Test - SEVERE; Tetrasodium EDTA: Eye rabbit 100 mg/24H - MODERATE, Skin rabbit 500 mg/24H - MODERATE

**Mutation Data:** Hydroquinone: Micronucleus test - human lymphocytes 75 µmol/l; DNA damage - human bone marrow 500 µmol/l; DNA damage - human lung 800 µmol/l; DNA inhibition - human HeLa cells 100 µmol/l

**Reproductive Effects Data:** Hydroquinone: Oral rat TDLo = 2500 mg/kg - Post-implantation mortality; Oral rat TDLo = 1 g/kg - Litter size

Lysine: Oral rat TDLo = 138 g/kg - fetotoxicity, Oral rat TDLo = 72450 mg/kg - post-implantation mortality

**Ingredient Toxicological Data:** Hydroquinone Oral rat LD50 = 320 mg/kg

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

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** Tetrasodium EDTA: BOD 0,02 g/g; COD 0,54 g/g; Fish toxicity Bluegill LC50 = 410 mg/l/96hours

---

## 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

--

**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

--

**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

--

**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

---

## 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:** Xn - HARMFUL N - DANGEROUS FOR THE ENVIRONMENT

**R PHRASES:** R 36/37/38: Irritating to eyes, respiratory system and skin. R 40: Limited evidence of a carcinogenic effect. R 43: May cause sensitization by skin contact. R 51: Toxic to aquatic organisms. R 68: Possible risk of irreversible effects.

**S PHRASES:** S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection. S 61: Avoid release to the environment. Refer to special instructions/Safety data sheets.

**Ingredients:** Hydroquinone; EDTA Tetrasodium Salt;

---

## 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. CCINFO RTECS. 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. In-house information. Technical Judgment. Vendor Information.

**R PHRASES:** R 36/37/38: Irritating to eyes, respiratory system and skin. R 40: Limited evidence of a carcinogenic effect. R 43: May cause sensitization by skin contact. R 51: Toxic to aquatic organisms. R 68: Possible risk of irreversible effects.

**Use of the substance/preparation:** Determination of dissolved oxygen

**Revision Summary:** European MSDS Only Updates in Heading(s) 2,

**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.**

**HACH COMPANY ©2006**