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MSDS No: M00421

# SAFETY DATA SHEET

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

**Product Name:** Lead Complexing Reagent A  
**Catalog Number:** HCT152A

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:** M00421

**Chemical Name:** Benzoic acid, 2-hydroxy-, monosodium salt

**Chemical Formula:** C<sub>7</sub>H<sub>5</sub>O<sub>3</sub>Na

**Chemical Family:** Substituted organic acid

**Use of the substance/preparation:** Laboratory Reagent

**CAS No.:** 54-21-7

**Hazard:** May cause irritation. Experimental teratogen. Experimental mutagen. May be embryotoxic.

**Date of MSDS Preparation:**

**Day:** 12

**Month:** 01

**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 Salicylate

**EEC Number:** 2001980.

**CAS No.:** 54217

**Percent Range:** 100,0

**Percent Range Units:** weight / weight

**Ingredient EEC Symbol:** Xn - HARMFUL

**Ingredient R phrase(s) (R phrase details given in Heading 16):** R 22

**TLV:** Respirable particles: 3 mg/m<sup>3</sup>; Inhalable particles: 10 mg/m<sup>3</sup>

**PEL:** Total dust: 15 mg/m<sup>3</sup>; Respirable fraction: 5 mg/m<sup>3</sup>

**EU Occupational Exposure Limits:** 3 mg/m<sup>3</sup>, Inhalable dust

## 3. HAZARDS IDENTIFICATION

### **Emergency Overview:**

**Appearance:** Faint pink to white

**Odor:** None

**EU Symbols:** Xn - HARMFUL

**R PHRASES:** R 22: Harmful if swallowed.

### **Protective Equipment:**

#### **Potential Health Effects:**

**Eye Contact (EC):** May cause irritation

**Skin Contact (EC):** May cause irritation

**Skin Absorption (EC):** Will be absorbed through the skin. Effects similar to those of ingestion

**Target Organs (SA E):** Central nervous system

**Ingestion (EC):** May cause: irritation of the mouth and esophagus Very large doses may cause: headache dizziness ringing in the ears (tinnitus) blurred vision confusion drowsiness thirst nausea vomiting diarrhea convulsions coma

**Target Organs (Ing E):** Central nervous system

**Inhalation:** May cause: irritation of nose and throat

**Target Organs (Inh E):** None Reported

**Medical Conditions Aggravated:** Allergies or sensitivity to aspirin or salicylates.

**Chronic Effects:** Salicylates may cause ringing in the ears (tinnitus), abnormal bleeding, gastric ulceration, mental deterioration, skin eruption, temporary vision loss, and other optical effects.

**Cancer / Reproductive Toxicity Information:**

IARC Listed: No

**Additional Cancer / Reproductive Toxicity Information:** In laboratory tests, sodium salicylate, when given orally to pregnant rats or mice, has caused various effects on the embryo, fetus, and newborn. The effects of sodium salicylate on the embryo, fetus, or newborn included: muscular, skeletal, and other developmental abnormalities; death (of embryo or fetus); and stillbirth.

**Toxicologically Synergistic Products:** None reported

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

**Ingestion (First Aid):** Do not induce vomiting. Call physician immediately.

**Inhalation:** Remove to fresh air.

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#### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Combustion generates toxic fumes.

**Hazardous Combustion Products:** May emit acrid smoke and fumes. Toxic fumes of: carbon monoxide, carbon dioxide.

**Fire / Explosion Hazards:** May react violently with: strong oxidizers Do not expose to flames. Do not expose to sparks or other ignition sources.

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Alcohol foam. Carbon dioxide Dry chemical. Water. Use media appropriate to surrounding fire conditions

**Extinguishing Media NOT To Be Used:** Not applicable 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. Evacuate area and fight fire from a safe distance.

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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:** 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 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 as needed to perform spill clean-up.

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#### 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:** Keep container tightly closed when not in use. Store in a cool, dry place. Protect from: light

**Special Packaging Instructions:** Not applicable

**Use of the substance/preparation:** Laboratory Reagent

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#### 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Have an eyewash station nearby. Use general ventilation to minimize exposure to mist, vapor or dust. 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

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes skin Do not breathe: dust Wash thoroughly after handling. Use with adequate ventilation.

**TLV:** Respirable particles: 3 mg/m<sup>3</sup>; Inhalable particles: 10 mg/m<sup>3</sup>

**PEL:** Total dust: 15 mg/m<sup>3</sup>; Respirable fraction: 5 mg/m<sup>3</sup>

**EU Occupational Exposure Limits:** 3 mg/m<sup>3</sup>, Inhalable dust

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Faint pink to white

**Physical State:** Solid

**Odor:** None

**pH:** 5 - 6 (aqueous solution).

**Vapor Pressure:** Not applicable

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

**Boiling Point:** Not applicable

**Melting Point:** Not determined.

**Flash Point:** Not applicable

**Method:** Not applicable

**Autoignition Temperature:** Not determined.

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Specific Gravity (water = 1):** Not determined.

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not applicable

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

**Solubility:**

**Water:** Soluble.

**Acid:** Not determined.

**Other:** Soluble in alcohol, glycerol.

**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:** Extreme temperatures Exposure to light. Excess moisture

**Reactivity / Incompatibility:** Incompatible with: acids iodine iron salts lead acetate oxidizers silver nitrate sodium phosphate

**Hazardous Decomposition:** Toxic fumes of: carbon dioxide carbon monoxide

**Hazardous Polymerization:** Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

**Product Toxicological Data:**

**LD50:** Oral rat LD<sub>50</sub> = 1200 mg/kg; Oral mouse LD<sub>50</sub> = 540 mg/kg; Oral rabbit LD<sub>50</sub> = 1700 mg/kg.

**LC50:** None reported.

**Dermal Toxicity Data:** None reported.

**Skin and Eye Irritation Data:** None reported.

**Mutation Data:** DNA damage in rat embryo @ 30 mg/l; DNA damage in rat liver @ 240 mg/l; Other data reported in RTECS.

**Reproductive Effects Data:** Oral rat TDLo (female) = 40 mg/kg (Effects on newborn: stillbirth); Oral rat TDLo = 25 mg/kg (Effects on newborn: weaning or lactation index);

Oral rat TDLo = 250 mg/kg (Musculoskeletal abnormalities); Oral mouse TDLo = 665 mg/kg (Death or other effects to embryo or fetus; Other developmental abnormalities); Other data reported in RTECS.

**Ingredient Toxicological Data:** --

Not applicable  
IARC Listed: No

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## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** --

Not applicable

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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:** EINECS Listed: Yes

**EEC Number:** 2001980.

**EEC LABEL COPY:**

**EU Symbols:** Xn - HARMFUL

**R PHRASES:** R 22: Harmful if swallowed.

**S PHRASES:** S 24/25: Avoid contact with skin and eyes.

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## 16. OTHER INFORMATION

**References:** Vendor Information. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Technical Judgment. Sixth Annual Report on Carcinogens, 1991. U.S. Department of Health and Human Services. Rockville, MD: Technical Resources, Inc. 1991. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. List of Dangerous Substances Classified in Annex I of the EEC Directive (67/548) - Classification, Packaging and Labeling of Dangerous Substances, Amended July 1992. IARC Monographs on the Evaluation of the Carcinogenic Risks to Humans. World Health Organization (Volumes 1-42) Supplement 7. France: 1987. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. 29 CFR 1900 - 1910 (Code of Federal Regulations - Labor).

**R PHRASES:** R 22: Harmful if swallowed.

**Use of the substance/preparation:** Laboratory Reagent

**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.**

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MSDS No: M01993

## SAFETY DATA SHEET

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

**Product Name:** Lead Buffer Solution B  
**Catalog Number:** HCT152B

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:** M01993

**Chemical Name:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

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

**CAS No.:** Not applicable

**Hazard:** May cause eye irritation.

**Date of MSDS Preparation:**

**Day:** 13

**Month:** 01

**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

#### Mannitol

**EEC Number:** 2007118

**CAS No.:** 69658

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

#### Demineralized Water

**EEC Number:** 2317912

**CAS No.:** 7732185

**Percent Range:** 80,0 - 90,0

**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:** 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

#### **Boric Acid**

**EEC Number:** 2331392  
**CAS No.:** 10043-35-3  
**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/m<sup>3</sup>, Inhalable dust

#### **Potassium Chloride**

**EEC Number:** 2312118  
**CAS No.:** 7447407  
**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/m<sup>3</sup>, Inhalable dust

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### **3. HAZARDS IDENTIFICATION**

#### ***Emergency Overview:***

**Appearance:** Clear, colorless liquid  
**Odor:** Odorless  
**EU Symbols:** Not applicable  
**R PHRASES:** Not applicable

#### ***Protective Equipment:***

#### ***Potential Health Effects:***

**Eye Contact (EC):** May cause irritation  
**Skin Contact (EC):** No effects are anticipated  
**Skin Absorption (EC):** No effects anticipated  
**Target Organs (SA E):** Not applicable  
**Ingestion (EC):** Very large doses may cause: blood pressure problems cardiac depression gastrointestinal tract irritation  
**Target Organs (Ing E):** None Reported  
**Inhalation:** No effects anticipated  
**Target Organs (Inh E):** Not applicable  
**Medical Conditions Aggravated:** None reported  
**Chronic Effects:** No effects anticipated  
**Cancer / Reproductive Toxicity Information:**  
This product does NOT contain any IARC listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** None reported  
**Toxicologically Synergistic Products:** None reported

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### **4. FIRST AID MEASURES**

**Eye Contact:** Flush eyes with water. Call physician if irritation develops.  
**Skin Contact (First Aid):** Wash skin with plenty of water.

**Ingestion (First Aid):** Give large quantities of water. Call physician immediately.

**Inhalation:** None required.

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## 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Material will not burn.

**Hazardous Combustion Products:** This material will not burn.

**Fire / Explosion Hazards:** This product will not burn or explode.

**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.

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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:** Stop spilled material from being released to the environment.

**Clean-up Technique:** Absorb spilled liquid with non-reactive sorbent material. Sweep up material. Dilute with a large excess of water. Filter to remove solids. Flush the spilled material to the drain with a large excess of water.

**Evacuation Procedure:** Evacuate as needed to perform spill clean-up. If conditions warrant, increase the size of the evacuation.

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## 7. HANDLING AND STORAGE

**Handling:** Avoid contact with eyes Wash thoroughly after handling. Maintain general industrial hygiene practices when using this product.

**Storage:** Protect from: heat

**Special Packaging Instructions:** Not applicable

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

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## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

**Engineering Controls:** Maintain general industrial hygiene practices when using this product.

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

**Skin / Hand Protection:** Not applicable

**Inhalation Protection:** adequate ventilation

**Precautionary Measures:** Avoid contact with: eyes Wash thoroughly after handling. Protect from: heat

**TLV:** Not established

**PEL:** Not established

**EU Occupational Exposure Limits:** Not established

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## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, colorless liquid

**Physical State:** Liquid

**Odor:** Odorless

**pH:** 6.5

**Vapor Pressure:** < 20hPa

**Vapor Density (air = 1):** 1.1 g/cm<sup>3</sup>

**Boiling Point:** Not applicable

**Melting Point:** Not applicable

**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):* Not determined  
*Evaporation Rate (water = 1):* Not determined  
*Volatile Organic Compounds Content:* Not determined  
*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  
*Reactivity / Incompatibility:* None reported  
*Hazardous Decomposition:* No hazardous decomposition products known.  
*Hazardous Polymerization:* Will not occur.

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## 11. TOXICOLOGICAL INFORMATION

*Product Toxicological Data:*

*LD50:* None reported

*LC50:* None reported

*Dermal Toxicity Data:* None reported

*Skin and Eye Irritation Data:* Potassium Chloride: Eye rabbit 500 mg/24H - MILD

*Mutation Data:* Mannitol: DNA inhibition Human lymphocyte 50 mmol/L

*Reproductive Effects Data:* None reported

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*Ingredient Toxicological Data:* Boric Acid: Oral rat LD50 = 2660 mg/kg; Mannitol: Oral rat LD50 = 13500 mg/kg;  
Potassium Chloride: Oral rat LD50 = 2600 mg/kg

This product does NOT contain any IARC listed chemicals.

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## 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.

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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:* Not applicable

*R PHRASES:* Not applicable

*S PHRASES:* Not applicable

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## 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. In-house information. Technical Judgment. EU Occupational Exposure Limits On Line.

**R PHRASES:** Not applicable

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

**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.**

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(970) 669-3050

MSDS No: M01994

## SAFETY DATA SHEET

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

**Product Name:** Lead Complexing Solution C  
**Catalog Number:** HCT152C

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:** M01994

**Chemical Name:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

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

**CAS No.:** Not applicable

**Hazard:** Causes severe eye irritation.

**Date of MSDS Preparation:**

**Day:** 13

**Month:** 01

**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

#### Hydrochloric Acid

**EEC Number:** 2315957

**CAS No.:** 7647040

**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:** 5 ppm ceiling

**PEL:** 5 ppm ceiling

**EU Occupational Exposure Limits:** Hydrogen chloride: 5 ppm (8 mg/m<sup>3</sup>); STEL 10 ppm (15<sup>3</sup>)

#### Demineralized Water

**EEC Number:** 2317912

**CAS No.:** 7732185

**Percent Range:** 60,0 - 70,0

**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

#### Nitritotriethanol

**EEC Number:** 2030498

**CAS No.:** 102-71-6

**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:** 5mg/m<sup>3</sup>  
**PEL:** Not established  
**EU Occupational Exposure Limits:** 5 mg/m<sup>3</sup>

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### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Clear, viscous liquid  
**Odor:** Amine  
**EU Symbols:** Not applicable  
**R PHRASES:** Not applicable

**Protective Equipment:**

**Potential Health Effects:**

**Eye Contact (EC):** May cause irritation  
**Skin Contact (EC):** May cause irritation  
**Skin Absorption (EC):** None Reported  
**Target Organs (SA E):** None Reported  
**Ingestion (EC):** May cause: burns of the mouth and esophagus Can cause: liver damage laryngitis kidney damage  
**Target Organs (Ing E):** Liver Kidneys  
**Inhalation:** No data reported.  
**Target Organs (Inh E):** None Reported  
**Medical Conditions Aggravated:** None reported  
**Chronic Effects:** Triethanolamine has caused liver and kidney damage in laboratory animals.  
**Cancer / Reproductive Toxicity Information:**  
An ingredient of this mixture is: IARC Group 3: Non-classifiable  
Hydrochloric acid  
**Additional Cancer / Reproductive Toxicity Information:** an experimental carcinogen.  
**Toxicologically Synergistic Products:** None reported

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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 soap and plenty of water. Call physician if irritation develops.  
**Ingestion (First Aid):** Do not induce vomiting. Give 1-2 glasses of water. Call physician immediately. Never give anything by mouth to an unconscious person.  
**Inhalation:** None required.

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### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Can burn in fire, releasing toxic vapors.  
**Hazardous Combustion Products:** Toxic fumes of: carbon monoxide, carbon dioxide. nitrogen oxides.  
**Fire / Explosion Hazards:** May react violently with: oxidizers bromine trifluoride acids  
**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:** Cover spilled material with a dry acid, such as citric or boric. Scoop up slurry into a large beaker. 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: a gallon or more of liquid is spilled. If conditions warrant, increase the size of the evacuation.

---

## 7. HANDLING AND STORAGE

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

**Storage:** Protect from: light moisture heat

**Special Packaging Instructions:** Not applicable

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

---

## 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 Do not breathe: mist/vapor Wash thoroughly after handling. Protect from: light heat moisture

**TLV:** Not established

**PEL:** Not established

**EU Occupational Exposure Limits:** Not established

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Clear, viscous liquid

**Physical State:** Liquid

**Odor:** Amine

**pH:** 9.0

**Vapor Pressure:** Not determined

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

**Boiling Point:** Not determined

**Melting Point:** Not determined

**Flash Point:** 185° C

**Method:** Closed cup

**Autoignition Temperature:** Not determined

**Flammability Limits:**

**Lower Explosion Limits:** Not determined

**Upper Explosion Limits:** Not determined

**Specific Gravity (water = 1):** 1.05

**Evaporation Rate (water = 1):** Not determined

**Volatile Organic Compounds Content:** Not determined

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

**Solubility:**

**Water:** Miscible

**Acid:** Not determined

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** Not determined

---

## 10. STABILITY / REACTIVITY

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

**Conditions to Avoid:** Exposure to light. Excess moisture Heating to decomposition.

**Reactivity / Incompatibility:** May react violently in contact with: oxidizers acids bromine trifluoride

**Hazardous Decomposition:** Toxic fumes of: carbon dioxide carbon monoxide nitrogen oxides

**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:** Triethanolamine: Skin human 15 mg/3D - MILD, Skin rabbit 560 mg/24H - MILD, Eye rabbit 20 mg - SEVERE

**Mutation Data:** Triethanolamine: Cytogenetic analysis Human lymphocytes - 100 µmol/L, Sister chromatid exchange Human lymphocytes 1 mmol/L, Oral mouse LDLo = 16 g/kg/64W continuous - carcinogenic effects

**Reproductive Effects Data:** None reported

--

**Ingredient Toxicological Data:** Triethanolamine: Oral rat LD50 = 8000 mg/kg, Dermal rabbit LD50 > 20 ml/kg;

Hydrochloric Acid: Oral rabbit LD50 = 900 mg/kg, Inhalation rat LC50 = 3124 ppm/1H

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

Hydrochloric acid

---

## 12. ECOLOGICAL INFORMATION

**Product Ecological Information:** --

No ecological data available for this product.

**Ingredient Ecological Information:** Hydrochloric Acid: LC100 trout 10 mg/L/24H, LC50 shrimp 100-300 ppm/48H (salt water), LC50 starfish 100-300 mg/L/48H, LC50 cockle 330-1000 mg/L/48H, TLm mosquito fish 282 ppm/96H (fresh water), LC50 goldfish 178 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

--

**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

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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:** Not applicable

**R PHRASES:** Not applicable

**S PHRASES:** Not applicable

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## 16. OTHER INFORMATION

**References:** TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Sax, N. Irving. Dangerous Properties of Industrial Materials, 7th Ed. New York: Van Nostrand Reinhold Co., 1989. Air Contaminants, Federal Register, Vol. 54, No. 12. Thursday, January 19, 1989. pp. 2332-2983. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. Technical Judgment. Gosselin, R. E. et al. Clinical Toxicology of Commercial Products, 5th Ed. Baltimore: The Williams and Wilkins Co., 1984. Sax, N. Irving and Richard J. Lewis, Sr., revised by. Hawley's Condensed Chemical Dictionary, Eleventh Ed. New York: Van Nostrand Reinhold Co., 1987. Patty, Frank A. Industrial Hygiene and Toxicology, 3rd Revised Edition. Volume 2. New York: A Wiley-Interscience Publication, 1981. Vendor Information. EU Occupational Exposure Limits On Line.

**R PHRASES:** Not applicable

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

**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.**

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MSDS No: M01995

## SAFETY DATA SHEET

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

**Product Name:** Lead Vial Reagent  
**Catalog Number:** HCT152R

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:** M01995

**Chemical Name:** Not applicable

**Chemical Formula:** Not applicable

**Chemical Family:** Not applicable

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

**CAS No.:** Not applicable

**Hazard:** Fast-acting poison. Highly toxic. MAY BE FATAL IF INHALED

**Date of MSDS Preparation:**

**Day:** 13

**Month:** 01

**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

#### Mannitol

**EEC Number:** 2007118

**CAS No.:** 69658

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

#### 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

#### Potassium Cyanide

**EEC Number:** 2057923

**CAS No.:** 151-50-8

**Percent Range:** 60,0 - 70,0



**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 26/27/28 R 32 R 50/53

**TLV:** 5 mg/m<sup>3</sup> (skin)

**PEL:** 5 mg/m<sup>3</sup> (skin)

**EU Occupational Exposure Limits:** None found. Cyanides are on the Priority List for OELs.

---

### 3. HAZARDS IDENTIFICATION

**Emergency Overview:**

**Appearance:** Orange powder

**Odor:** Odorless

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

**R PHRASES:** R 26/27/28: Very toxic by inhalation, in contact with skin and if swallowed. R 32: Contact with acids liberates very toxic gas. R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Antidote:** Always have on hand a cyanide first aid kit. Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Repeat 5 times at 15 second intervals. Transport to hospital immediately. Note to Physician: If patient has not responded to amyl nitrite, inject intravenously 10 ml of a 3% solution of sodium nitrite at a rate not greater than 2,5 - 5 ml/min. Follow directly with 50 ml of a 25 % solution of sodium thiosulfate at the same rate by the same route. Keep patient under observation. If signs of poisoning persist or reappear, repeat nitrite and thiosulfate injections 1 hour later in one-half the original doses.

**Protective Equipment:**

**Potential Health Effects:**

**Eye Contact (EC):** May cause irritation May cause: ataxia - loss of muscular coordination respiratory stimulation

**Skin Contact (EC):** None reported

**Skin Absorption (EC):** Harmful if absorbed through the skin Effects similar to those of ingestion

**Target Organs (SA E):** Central nervous system

**Ingestion (EC):** Very Toxic May be rapidly fatal. Causes: cyanosis ( a reduction of the blood's ability to carry oxygen, giving a bluish discoloration) May cause: anxiety headache confusion irregular heartbeat coma death

**Target Organs (Ing E):** Brain Central nervous system

**Inhalation:** Effects similar to those of ingestion.

**Target Organs (Inh E):** Brain Central nervous system

**Medical Conditions Aggravated:** Pre-existing: Skin conditions

**Chronic Effects:** Chronic overexposure may cause central nervous system effects

**Cancer / Reproductive Toxicity Information:**

This product does NOT contain any IARC listed chemicals.

**Additional Cancer / Reproductive Toxicity Information:** Contains: an experimental mutagen. 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 plenty of water for 15 minutes. Remove contaminated clothing. Call physician immediately.

**Ingestion (First Aid):** Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Repeat every five minutes. Administer artificial respiration with 100% oxygen. Transport to hospital immediately.

**Inhalation:** Break an amyl nitrite pearl in cloth and hold lightly under nose for 15 seconds. Repeat 5 times at 15 second intervals. Transport to hospital immediately.

---

### 5. FIRE FIGHTING MEASURES

**Flammable Properties:** Reacts with water or any acid to form flammable hydrogen cyanide gas.

**Hazardous Combustion Products:** Toxic fumes of: cyanide compounds nitrogen oxides.

**Fire / Explosion Hazards:** Not combustible. Reaction with water or any acid releases toxic and flammable hydrogen cyanide gas.

**Static Discharge:** None reported.

**Mechanical Impact:** None reported

**Extinguishing Media:** Alkali dry chemical. Do NOT use carbon dioxide. Do NOT use water.

**Extinguishing Media NOT To Be Used:** Not applicable Do NOT use carbon dioxide. Do NOT use water.

**Fire Fighting Instruction:** Evacuate area and fight fire from a safe distance. 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:** Releases of this material may contaminate the environment. Stop spilled material from being released to the environment.

**Clean-up Technique:** Cover spilled material with an alkali, such as soda ash or sodium bicarbonate. Carefully mist spill with bleach until saturated. Scoop up slurry into a large beaker. Oxidize spilled material with a 50% excess of bleach containing at least 5% sodium hypochlorite. Allow to react for 24 hours in a fume hood. Flush reacted material to the drain with a large excess of water. Decontaminate area with bleach 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. Deny access to unnecessary and unprotected personnel.

---

## 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:** Store away from: acids / acid fumes. oxidizers

**Special Packaging Instructions:** Not applicable

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

---

## 8. EXPOSURE CONTROLS / PROTECTIVE EQUIPMENT

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

**Personal Protective Equipment:**

**Eye Protection:** safety glasses with top and side shields

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

**Inhalation Protection:** laboratory fume hood

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

Keep away from: acids/acid fumes

**TLV:** Not established

**PEL:** Not established

**EU Occupational Exposure Limits:**

---

## 9. PHYSICAL / CHEMICAL PROPERTIES

**Appearance:** Orange powder

**Physical State:** Solid

**Odor:** Odorless

**pH:** 12

**Vapor Pressure:** Not applicable

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

**Boiling Point:** Not applicable

**Melting Point:** 635° c

**Flash Point:** Not applicable

**Method:** Not applicable

**Autoignition Temperature:**

**Flammability Limits:**

**Lower Explosion Limits:** Not applicable

**Upper Explosion Limits:** Not applicable

**Specific Gravity (water = 1):** Not determined

**Evaporation Rate (water = 1):** Not applicable

**Volatile Organic Compounds Content:** Not determined

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

**Solubility:**

**Water:** Soluble

**Acid:** Generates toxic fumes

**Other:** Not determined

**Metal Corrosivity:**

**Steel:** Not determined

**Aluminum:** Not determined

---

## 10. STABILITY / REACTIVITY

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

**Conditions to Avoid:** Excess moisture Heating to decomposition.

**Reactivity / Incompatibility:** Reacts with water or any acid to form toxic and flammable hydrogen cyanide gas.

Incompatible with: oxidizers metallic salts alkaloidal salts

**Hazardous Decomposition:** Contact with acids/acid fumes releases toxic cyanide gas. Heating to decomposition releases: cyanide nitrogen oxides

**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:** Potassium Cyanide: DNA Inhibition in mouse lymphocytes @ 1 mmol/l; Cytogenic analysis in mouse mammary gland @ 1 mmol/l/48hr. Mannitol: DNA inhibition Human lymphocyte 50 mmol/L

**Reproductive Effects Data:** Potassium Cyanide: Oral mammal- domestic animal TD Lo = 1767 mg/kg: effects on newborn

--

**Ingredient Toxicological Data:** Potassium Cyanide: Oral rat LD50 = 5 mg/kg, Ocular rabbit LD50 = 7.87 mg/kg;

Mannitol: Oral rat LD50 = 13500

This product does NOT contain any IARC listed chemicals.

---

## 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:** Potassium Cyanide Mixture

--

**ICAO Hazard Class:** 6,1

**ICAO Subsidiary Risk:** NA

**ICAO UN/ID Number:** UN1680

**ICAO Packing Group:** I

**I.M.O.:**

**I.M.O. Proper Shipping Name:** Potassium Cyanide, Solid Mixture

--

**I.M.O. Hazard Class:** 6,1

**I.M.O. Subsidiary Risk:** NA

**I.M.O. UN Number:** UN1680

**I.M.O. Packing Group:** I

**A.D.R.:**

**A.D.R. Proper Shipping Name:** Potassium Cyanide Mixture

--

**A.D.R. Hazard Class:** 6,1

**A.D.R. Subsidiary Risk:** NA

**A.D.R. UN-Number::** 1680

**A.D.R. Packing Group:** I

**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.

**EEC Number:** Not applicable

**EEC LABEL COPY:**

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

**R PHRASES:** R 26/27/28: Very toxic by inhalation, in contact with skin and if swallowed. R 32: Contact with acids liberates very toxic gas. R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**S PHRASES:** S 28a: After contact with skin, wash immediately with plenty of water. S 1: Keep locked up. S 35: This material and its container must be disposed of in a safe way. S 37/39: Wear suitable 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).

---

## 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. CCINFO RTECS. Canadian Centre for Occupational Health and Safety. Hamilton, Ontario Canada: 30 June 1993. Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Fire Protection Guide on Hazardous Materials, 10th Ed. Quincy, MA: National Fire Protection Association, 1991. 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. 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. Sixth Annual Report on Carcinogens, 1991. U.S. Department of Health and Human Services. Rockville, MD: Technical Resources, Inc. 1991. Technical Judgment. TLV's Threshold Limit Values and Biological Exposure Indices for 1992-1993. American Conference of Governmental Industrial Hygienists, 1992. Vendor Information. The Merck Index, 11th Ed. Rahway, New Jersey: Merck and Co., Inc., 1989.

**R PHRASES:** R 26/27/28: Very toxic by inhalation, in contact with skin and if swallowed. R 32: Contact with acids liberates very toxic gas. R 50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

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

**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.

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