

List	Material Safety Data Sheet (Documentation Requirements)
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Section 1 – Product and Company Information

Product Name	Glycohemoglobin	Emergency Telephone No.
Catalog Number	CD-GHB-040	CHEMTREC (800) 424-9300
Product Type	Clinical Chemistry Reagent	International CHEMTREC (703) 527-3887
Company Name	Concept Diagnostics	Company Telephone No.
Street Address	2527 S. Greenwood Pl.,	(909) 947-3462
City, State, Zip Code, Country	Ontario, CA 91761 USA	Fax No. (909) 947-3162

Section 2 – Composition/Information on Ingredients

	Chemical Names	Concentration	CAS#
Resin Reagent:	Cation Exchange Resin	8 mg/dL	N/A
Lysing Reagent:	Potassium Cyanide	10 mM	151-50-8
	Surfactant	N/A	N/A
Standard:	Glycohemoglobin	10%	N/A

Other components either non-hazardous or at concentrations below that requiring hazardous listing.

Section 3 – Hazards Identification

Emergency Overview:					
Note: The following information applies to the component materials at higher concentrations than present in the reagent. Although lower concentrations are present in the reagent, appropriate safety precautions should still be taken.					
Potassium Cyanide: Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment. Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Causes burns. Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment. Target organ(s): Blood. Central nervous system.					
	HMIS Rating			NFPA Rating	
	Health	Flammability	Reactivity	Health	Flammability Reactivity
Potassium Cyanide:	3*	0	1	3	0 1
*additional chronic hazards present. For additional information on toxicity, please refer to section 11.					

Section 4 – First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.
Inhalation Exposure
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Dermal Exposure
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.
Eye Exposure
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5- Fire and Explosive Hazard Data

Flammable Hazards	Flash Point	Autoignition Temp	Flammability
N/A	N/A	N/A	N/A
Extinguishing Media			
Potassium cyanide			
Suitable: Appropriate foam.			
Unsuitable: Do not use carbon dioxide extinguisher on this material.			
Firefighting Measures			
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.			
Specific Hazard(s): Emits toxic fumes under fire conditions.			
Specific Method(s) of Fire Fighting: Potassium cyanide: Fire fighting hazard: water spray can be used to fight fire in area containing cyanide and to cool fire-exposed metal containers. However, direct contact of material with water or steam will cause decomposition liberating highly toxic hydrogen cyanide gas as well as generating a highly hazardous solution of dissolved cyanide which must be kept out of sewers and watercourses. Cyanide has been found to form explosive mixtures sometimes spontaneously with chlorates, nitrates, and nitrogen trichloride plus ammonia.			

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Section 6 – Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill Evacuate area. Ventilate the area.
Procedures of Personal Precaution Wear personal protective equipment. Refer to section 8.
Methods for Cleaning Up and Disposal Absorb on inert material (sand or vermiculite), then place in closed containers for disposal. Wash spill site after material pickup is complete. Follow federal, state and local disposal regulations.

Section 7 – Handling and Storage

Handling User Exposure: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.
Storage Suitable: Keep tightly closed. Store in a cool dry place. Avoid contact with acid.

Section 8 – Exposure Controls / PPE

Engineering Controls Safety shower and eyewash. Good general ventilation is satisfactory.	General Hygiene Measures Wash contaminated clothing before reuse. Wash thoroughly after handling.
Personal Protective Equipment Respiratory Protection: None required where adequate ventilation is satisfactory. Hand: Protective gloves required. Eye: Chemical safety goggles with side shields recommended. Other protective equipment: Laboratory coat recommended	

Exposure Limits, RTECS: Potassium Cyanide:				
Country	Source	Type	Value	Remarks
New Zealand	OEL	---	---	Check ACGIH TLV
USA	NIOSH	Ceiling concentration	4.7 PPM (CN) / 10M	---
Exposure Limits: Potassium Cyanide:				
Country	Type	Value		
Poland	NDS	---		
Poland	NDSch	---		
Poland	NDSP	5 mg/m ³		

Section 9 - Physical Data

Boiling Point N/A	Melting Point Potassium Cyanide: 634°C	Specific Gravity (g/cm³) Potassium Cyanide: 1.52
Vapor Pressure N/A	Percent Volatile N/A	Vapor Density N/A
Evaporation Rate N/A	Solubility in Water Soluble	Appearance Lysing Reagent: Clear liquid Resin Reagent: Clear liquid Standard: Red lyophilized powder

Section 10 – Stability and Reactivity

Stability			
Chemical	Stable	Conditions of Instability	Materials to Avoid
Potassium Cyanide	Stable	May decompose on exposure to moist air or water. Absorbs carbon dioxide from air. Light sensitive.	Strong oxidizing agents Avoid contact with acid., iodine, permanganates, peroxides, metallic salts, chloral hydrate, alkalooids, chlorates
Hazardous Decomposition Products Potassium Cyanide→ Hydrogen cyanide, Nitrogen oxides, Potassium oxides.			Hazardous Polymerization Hazardous Polymerization: Will not occur.

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Section 11 – Toxicological information

<p>Route of exposure Potassium Cyanide: Skin contact: May cause skin irritation. Skin absorption: May be fatal if absorbed through the skin. Eye contact: May cause eye irritation. Inhalation: May be fatal if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. Ingestion: May be fatal if swallowed. Target organ(s): Blood. Central nervous system. Cardiovascular system. Thyroid.</p>	<p>Signs and Symptoms of Exposure Potassium Cyanide: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause: Lung irritation. Cyanosis. CNS depression. To the best of our knowledge, the chemical, physical and toxicological properties of have not been thoroughly investigated.</p>
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Toxicity Data: Potassium Cyanide:				
Species:	Dose:	Route of Application:	Result:	Remarks:
Human	2.857 mg/kg	Oral	LDLO	---
Rat	5 mg/kg	Oral	LD50	---
Rat	4 mg/kg	Intraperitoneal	LD50	Lungs, Thorax, or Respiration: Other changes.
Rat	7814 ug/kg	Subcutaneous	LD50	---
Rat	3600 ug/kg	Intravenous	LD50	Behavioral: Altered sleep time (including change in righting reflex). Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Dyspnea.
Mouse	8.5 mg/kg	Oral	LD50	---
Mouse	5991 ug/kg	Intraperitoneal	LD50	---
Mouse	6500 ug/kg	Subcutaneous	LD50	---
Mouse	2600 ug/kg	Intravenous	LD50	Peripheral Nerve and Sensation: Flaccid paralysis without anesthesia (usually neuromuscular blockage). Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Respiratory stimulation.
Dog	6 mg/kg	Subcutaneous	LD50	Behavioral: Convulsions or effect on seizure threshold.
Cat	2200 mg/kg	Intravenous	LD50	---
Rabbit	5 mg/kg	Oral	LD50	---
Rabbit	3972 ug/kg	Intraperitoneal	LD50	Blood: Other changes.
Rabbit	4 mg/kg	Subcutaneous	LD50	Lungs, Thorax, or Respiration: Other changes.
Rabbit	3256 ug/kg	Intramuscular	LD50	---
Rabbit	7870 ug/kg	Ocular	LD50	Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Other. Behavioral: Ataxia. Lungs, Thorax, or Respiration: Respiratory stimulation.
Pigeon	4 mg/kg	Intramuscular	LD50	---

Chronic Exposure – Teratogen: Potassium Cyanide:				
Species:	Dose:	Route of Application:	Exposure Time:	Result:
Rat	45 mg/kg	Intraperitoneal	1-15 D PREG	Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Chronic Exposure – Mutagen: Potassium Cyanide:			
Species:	Dose:	Cell Type:	Mutation Test:
Rat	300 umol/L	Liver	DNA damage
Mouse	1 mmol/L	Lymphocyte	DNA inhibition
Mouse	1 mmol/L	Mammary gland	Cytogenetic analysis

Chronic Exposure – Reproductive Hazard: Potassium Cyanide:				
Species:	Dose:	Route:	Exposure Time:	Result:
Rat	65 gm/kg	Oral	14 D PRE / 1-22 D PREG	Effects on Fertility: Other measures of fertility
Domestic Animals	1767 mg/kg	Oral	8-20W PREG / 44D POST	Effects on Newborn: Weaning or lactation index (e.g., # alive at weaning per # alive at day 4). Effects on Newborn: Other neonatal measures or effects.

Section 12 – Ecological information

Acute Ecotoxicity Tests: Potassium Cyanide:			
Test Type:	Species:	Time:	Value:
LC50 Fish	Lepomis macrochirus (Bluegill)	96 H	0.45 mg/L
EC50 Daphnia	Daphnia magna	48 H	2 mg/L
EC50 Daphnia	Daphnia magna	24 H	0.53 mg/L

Section 13 - Disposal Considerations

Contact a licensed professional waste disposal service to dispose of this material.
 Observe all federal, state, and local environmental regulations.

List No:	L42-M32	Revision :	C	Prepared by:	RLD	Approved by:	JCFA	Issue date:	08/30/07
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Section 14 – Transport Information

DOT: Proper shipping name: None. Non-hazardous for Transport: This substance is considered to be non-hazardous for transport.	IATA: Non-hazardous for Air Transport.
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Section 15 - Regulatory Information

<p>Potassium Cyanide: EU DIRECTIVES CLASSIFICATION Symbol of Danger: T+ N Indication of Danger: Very toxic. Dangerous for the environment. R: 26/27/28 32 50/53 Risk Statements: Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment. S: 7 28 29 45 60 61 Safety Statements: Keep container tightly closed. After contact with skin, wash immediately with plenty of soap-suds. Do not empty into drains. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets.</p> <p>CANADA REGULATORY INFORMATION WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR. DSL: Yes NDSL: No</p>	<p>Potassium Cyanide: US CLASSIFICATION AND LABEL TEXT Indication of Danger: Highly Toxic (USA) Very Toxic (EU). Dangerous for the environment. Risk Statements: Very toxic by inhalation, in contact with skin and if swallowed. Contact with acids liberates very toxic gas. Causes burns. Very toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment. Safety Statements: Keep container tightly closed. After contact with skin, wash immediately with plenty of water. Do not empty into drains. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste. Avoid release to the environment. Refer to special instructions/safety data sheets. US Statements: Target organ(s): Blood. Central nervous system.</p> <p>UNITED STATES REGULATORY INFORMATION SARA LISTED: Yes NOTES: This product is subject to SARA section 313 reporting requirements. TSCA INVENTORY ITEM: Yes</p>
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Section 16 - Other Information

<p>This Product is labeled in accordance with CFR21 (Food and Drugs), Section 809.10.</p> <p>The information contained herein has been compiled from data presented in various technical sources believed to be accurate. We make no warranties, express or implied, and assume no liability in connection with the use of this information. It is the user's responsibility to determine the suitability of this information and to assure the adoption of necessary safety precautions.</p>

N/A - Not Applicable or Not Available