MATERIAL SAFETY DATA SHEET

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MSDS No. WLC9027X
Effective Date September 3, 1998

SECTION I NAME — 24 HOUR EMERGENCY ASSISTANCE

Product	BARIUM CHLORIDE, 0.1 M/ 0.2N SOLUTION
Chemical Synonyms	Barium Chloride, Water Solution
Formula	Mixture.
Unit Size	up to 4 Lt.
C.A.S. No.	Mixture.

CHEMTREC 800-424-9300
Day 716-226-6177

Health	2
Fire	0
Reactivity	0

NFPA HAZARD RATING — HMIS *

LEAST	SLIGHT	MODERATE	HIGH	EXTREME
0	1	2	3	4

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Barium Chloride: (CAS No. 10361-37-2)	2.4%	See Section V.
Water: (CAS No. 7732-18-5)	97.6%	None established.
WARNING! MAY BE HARMFUL OR FATAL IF SWALLOWED.		
CONTACT CAUSES SKIN AND EYE IRRITATION.		

SECTION III PHYSICAL DATA

Melting Point (°F)	Freezes approx. 0°C (32°F)	Specific Gravity (H_2O = 1)	1.01
Boiling Point (°F)	100°C (212°F) water.	Percent Volatile by Volume (%)	97.6%
Vapor Pressure (mm Hg)	14 mm (water).	Evaporation Rate (Water =1)	Slightly less than 1.
Vapor Density (Air=1)	0.7 (water).		
Solubility in Water	Complete.		
Appearance & Odor	Clear, colorless liquid; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-flammable.	Flammable Limits in Air % by Volume	Lower	Upper
		N/A		
Extinguisher Media	Use any media suitable for extinguishing supporting fire.			

SPECIAL FIREFIGHTING PROCEDURES

A NIOSH/MSHA-approved self-contained breathing apparatus should be worn for protection against barium-containing dust, mist or fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS

In fire conditions, water may evaporate from this solution, which may cause hazardous decomposition products to be produced as dust or fume.

D.O.T. **Non-regulated.**

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

BB 41

Threshold Limited Value

0.5 mg/m^3 as Barium (ACGIH, 1992-93). U.S. H Toxic Substance List (1976) gives; orl-hmu TDLo: 80 mg/Kg. ; orl-rat L. 335 mg/Kg.

Effects of Overexposure

MAY BE HARMFUL OR FATAL IF SWALLOWED. Oral intake may cause weakness, salivation and nausea, followed by vomiting and diarrhea. Patient may become cold and experience varying degrees of paralysis. INHALATION: May be harmful, with symptoms similar to those of oral intake. Observe allowable limits. EYES AND SKIN CONTACT: Not usually severe, but may cause irritation to sensitive individuals.

Emergency and First Aid Procedures

INGESTION: If swallowed, if conscious, give one or two glasses of water to drink and induce vomiting. Repeat until vomit fluid is clear. Call physician immediately. Never give anything by mouth to an unconscious person. EYES: Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention. SKIN: Flush with water, then wash with mild soap and water. INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SECTION VI REACTIVITY DATA

Stability			Conditions to Avoid
	Unstable		Excessive temperature and heat.
	Stable	X	

Incompatibility (Materials to Avoid) Bromine Trifluoride and 2-Furan percarboxylic acid, violent reaction.

Hazardous Decomposition Products Thermal decomposition or burning may produce hydrochloric acid, barium oxide and toxic fumes of chlorine gas.

Hazardous Polymerization		Conditions to Avoid
May Occur	Will Not Occur	Not applicable.
	X	

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

In case of spill, treat the spill with dilute sulfuric acid solution to precipitate the barium to barium sulfate. Neutralize the excess acid using sodium bicarbonate. Flush residue to sewer with copious amounts of water.

Waste Disposal Method Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

Dispose of by treating barium chloride solution with dilute sulfuric acid solution to precipitate the barium to barium sulfate. Neutralize the excess acid using sodium bicarbonate. Flush residue to sewer with copious amounts of water. Barium chloride solution may also be disposed of by contracting with a licensed waste disposal service.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) None needed in normal laboratory handling. If misty conditions prevail, work in ventilation hood or wear a NIOSH/MSHA-approved respirator.

Ventilation				
	Local Exhaust	None required.	Special	No.
	Mechanical (General)	None required.	Other	No.

Protective Gloves		Eye Protection	
	Rubber.		Chemical safety glasses.

Other Protective Equipment Goggles, smock, apron, proper gloves, eye wash station.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing

Keep container tightly closed when not in use.

Store in a cool place, away from food products. Wash thoroughly after handling.

Other Precautions Read label on container before using. Do not wear contact lenses when working with chemicals.

Avoid contact with skin, eyes and clothing. Avoid breathing mist. Remove and wash contaminated clothing.

For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Revision No. 1	Date 9/3/98	Approved Michael Raszeja	Chemical Safety Coordinator MR

WLC9027X BARIUM CHLORIDE 0.1M IN 250ML OF WATER

To prepare the solution, quantitatively transfer the contents of the bottle of concentrate to a 250mL volumetric flask by rinsing the bottle into the flask twice with distilled water. Add distilled water to the fill line of the volumetric flask, cap the flask and thoroughly mix.

Alternative concentrations:

To make: 0.05M solution, dilute to 500mL final volume
0.2M solution, dilute to 125mL final volume

Safety Note: Normal safety precautions should always be taken when handling chemicals and chemical solutions, regardless of their packaging. See reverse side of this sheet for safety information