





Material Safety Data Sheet

NFPA	HMIS	Personal Protective Equipment						
	<table><tr><td>Health Hazard</td><td>2</td></tr><tr><td>Fire Hazard</td><td>3</td></tr><tr><td>Reactivity</td><td>0</td></tr></table>	Health Hazard	2	Fire Hazard	3	Reactivity	0	<div></div> <div>See Section 15.</div>
Health Hazard	2							
Fire Hazard	3							
Reactivity	0							

Section 1. Chemical Product and Company Identification			Page Number: 1
Common Name/ Trade Name	1-Chloro-n-butane	Catalog Number(s).	HP502, BS500,C1219
Manufacturer	SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	CAS#	109-69-3
		RTECS	EJ6300000
		TSCA	TSCA 8(b) inventory: 1-Chloro-n-butane
Commercial Name(s)	Not available.	CI#	Not available.
Synonym	Not available.	IN CASE OF EMERGENCY CHEMTREC (24hr) 800-424-9300 CALL (310) 516-8000	
Chemical Name			
Chemical Family	Not available.		
Chemical Formula	C4H9Cl		
Supplier	SPECTRUM CHEMICAL MFG. CORP. 14422 S. SAN PEDRO STREET GARDENA, CA 90248		

Section 2. Composition and Information on Ingredients					
		Exposure Limits			
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) {1-}Chloro{-n-}butane	109-69-3				100
Toxicological Data on Ingredients	1-Chloro-n-butane: ORAL (LD50): Acute: 2670 mg/kg [Rat].				

Section 3. Hazards Identification	
Potential Acute Health Effects	Very hazardous in case of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (irritant, permeator). Inflammation of the eye is characterized by redness, watering, and itching.
Potential Chronic Health Effects	Very hazardous in case of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (irritant, permeator). CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to liver, mucous membranes. Repeated or prolonged exposure to the substance can produce target organs damage.

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Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.
Skin Contact	After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	Allow the victim to rest in a well ventilated area. Seek immediate medical attention.
Serious Inhalation	Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.
Ingestion	Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	Flammable.
Auto-Ignition Temperature	460°C (860°F)
Flash Points	CLOSED CUP: -6.7°C (19.9°F). OPEN CUP: -5°C (23°F).
Flammable Limits	LOWER: 1.8% UPPER: 10.1%
Products of Combustion	These products are carbon oxides (CO, CO2).
Fire Hazards in Presence of Various Substances	Flammable in presence of open flames and sparks.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.
Fire Fighting Media and Instructions	Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.
Special Remarks on Fire Hazards	Not available.
Special Remarks on Explosion Hazards	Not available.

Section 6. Accidental Release Measures

Small Spill	Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill	Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.
Storage	Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	Not available.

Section 9. Physical and Chemical Properties

Physical state and appearance	Liquid.	Odor	Not available.
Molecular Weight	92.57 g/mole	Taste	Not available.
pH (1% soln/water)	Not available.	Color	Not available.
Boiling Point	78.4°C (173.1°F)		
Melting Point	-123.1°C (-189.6°F)		
Critical Temperature	Not available.		
Specific Gravity	0.8862 (Water = 1)		
Vapor Pressure	80.1 mm of Hg (@ 20°C)		
Vapor Density	3.2 (Air = 1)		
Volatility	100% (v/v).		
Odor Threshold	0.9 ppm		
Water/Oil Dist. Coeff.	Not available.		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water, methanol, diethyl ether.		
Solubility	Soluble in methanol, diethyl ether. Very slightly soluble in cold water.		

Section 10. Stability and Reactivity Data

Stability The product is stable.

Instability Temperature Not available.

Conditions of Instability Not available.

Incompatibility with various substances Not available.

Corrosivity Non-corrosive in presence of glass.

Special Remarks on Reactivity Not available.

Special Remarks on Corrosivity Not available.

Polymerization No.

Section 11. Toxicological Information

Routes of Entry Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals Acute oral toxicity (LD50): 2670 mg/kg [Rat].

Chronic Effects on Humans The substance is toxic to liver, mucous membranes.

Other Toxic Effects on Humans Very hazardous in case of ingestion, of inhalation.
Hazardous in case of skin contact (irritant, permeator).

Special Remarks on Toxicity to Animals Not available.

Special Remarks on Chronic Effects on Humans Not available.

Special Remarks on other Toxic Effects on Humans Not available.

Section 12. Ecological Information

Ecotoxicity Not available.

BOD5 and COD Not available.

Products of Biodegradation Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation Not available.

Section 13. Disposal Considerations**Waste Disposal****Section 14. Transport Information****DOT Classification** Class 3: Flammable liquid.**Identification** : Chlorobutane : UN1127 PG: II**Special Provisions for Transport** Not available.**DOT (Pictograms)****Section 15. Other Regulatory Information and Pictograms****Federal and State Regulations**

Pennsylvania RTK: 1-Chloro-n-butane
 Massachusetts RTK: 1-Chloro-n-butane
 TSCA 8(b) inventory: 1-Chloro-n-butane

California Proposition 65 Warnings**Other Regulations** OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).**Other Classifications**

WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
 CLASS D-2B: Material causing other toxic effects (TOXIC).

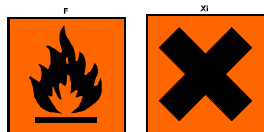
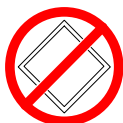
DSCL (EEC) R11- Highly flammable.
 R38- Irritating to skin.
 R41- Risk of serious damage to eyes.

HMIS (U.S.A.)

Health Hazard	2
Fire Hazard	3
Reactivity	0
Personal Protection	h

National Fire Protection Association (U.S.A.)

Health	2	3	0	Flammability
				Reactivity
				Specific hazard

WHMIS (Canada) (Pictograms)**DSCL (Europe) (Pictograms)****TDG (Canada) (Pictograms)**

**ADR (Europe)
(Pictograms)****Protective Equipment**

Gloves.



Lab coat.



Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Splash goggles.

Section 16. Other Information**MSDS Code** C4040**References** Not available.**Other Special Considerations** Not available.

Validated by Sonia Owen on 8/11/2006.

Verified by Sonia Owen.

Printed 9/11/2006.

CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.