Rhodia

Material Safety Data Sheet

N-BUTYL CHLORIDE

Date Prepared: 7/13/05 **Supersedes Date: 3/07/02**

1. PRODUCT AND COMPANY DESCRIPTION

RHODIA INC.
RHODIA NOVECARE
CN7500
8 Cedar Brook Drive
Cranbury NJ 08512-7500

Emergency Phone Numbers:
FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT CONTACT: CHEMTREC (800-424-9300 within the United States or 703-527-3887 for international collect calls) or Rhodia CAERS (Communication and Emergency Response System) at 800-916-3232.

For Product Information:
(888) 776-7337

Chemical Name or Synonym:
BUTANE, 1-CHLORO-; 1-CHLOROBUTANE

Molecular Formula:
C_4H_9Cl

2. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Reg Number	OSHA Hazard	Percentage
BUTANE, 1-CHLORO-	109-69-3	Y	> 99.5
BUTANE, 2-CHLORO-	78-86-4	N	~ 0.15
BUTANOL	71-36-3	Y	~ 0.15

3. HAZARDS IDENTIFICATION

A. EMERGENCY OVERVIEW:

Physical Appearance and Odor:
clear, colorless / liquid, characteristic odor.

Warning Statements:
DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. MAY CAUSE

ALLERGIC SKIN REACTION. MAY CAUSE SKIN AND EYE IRRITATION. May cause gastrointestinal tract, liver, nervous system and respiratory tract effects based on animal data.

B. POTENTIAL HEALTH EFFECTS:

Acute Eye:
May cause significant irritation to the eyes. May cause redness, tearing.

Acute Skin:
May cause irritation, redness, sensitization.

Acute Inhalation:
May cause significant respiratory tract irritation, coughing, a burning sensation, shortness of breath.

Acute Ingestion:
May cause irritation, nausea, vomiting.

Chronic Effects:
This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

4. FIRST AID MEASURES

FIRST AID MEASURES FOR ACCIDENTAL:

Eye Exposure:
Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek immediate medical attention.

Skin Exposure:
In case of contact, immediately wash with plenty of soap and water for at least 15 minutes. Seek medical attention. Remove contaminated clothing and shoes while washing. Clean contaminated clothing and shoes before re-use or discard if they cannot be thoroughly cleaned.

Inhalation:
Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek immediate medical attention.

Ingestion:
Wash out mouth with water and keep at rest. Seek immediate medical attention.

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:
Skin contact may aggravate existing skin disease.

NOTES TO PHYSICIAN:
All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically. No specific antidote available.

5. FIRE FIGHTING MEASURES

FIRE HAZARD DATA:

Flash Point:
-11 C (12 F). Flammability Class: EXTREMELY FLAMMABLE.

Method Used:
Tagliabue Closed Cup

Flammability Limits (vol/vol%):	Lower:	Upper:
	1.8	10.1

Extinguishing Media:
Recommended: alcohol foam, water fog, carbon dioxide, dry chemical.

Special Fire Fighting Procedures:
Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Stay upwind; keep out of low areas. Keep unnecessary people away, isolate hazard area and deny entry. Use electrical equipment suitable for atmospheres that may contain flammable gases or vapors. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Cool containers exposed to fire with water. CAUTION: After fire is extinguished, vapors could accumulate and travel to a source of ignition and flash back. After fire is extinguished, do not turn on any ignition source until the area is determined to be free from explosion or fire hazards.

Unusual Fire and Explosion Hazards:
Vapors may travel a considerable distance to a source of ignition and flash back along vapor trail. Containers may explode (due to the build-up of pressure) when exposed to extreme heat.

Hazardous Decomposition Materials (Under Fire Conditions):
hydrogen chloride
phosgene
oxides of carbon

Autoignition Temperature:
240 C (464 F)

6. ACCIDENTAL RELEASE MEASURES

Evacuation Procedures and Safety:
Wear appropriate protective gear for the situation. See Personal Protection information in Section 8. Exclude all except properly equipped emergency personnel. Evacuate and isolate area exposed to vapors. Stay upwind and keep out of low areas. Eliminate all sources of ignition until the area is determined to be free from explosion or fire hazards. Ventilate closed spaces before entering.

Containment of Spill:
Stop leak if it can be done without risk. Dike spill using absorbent or impervious materials such as earth, sand or clay. Collect and contain contaminated absorbent and dike material for disposal.

Cleanup and Disposal of Spill:
Use non-sparking tools. Pump any free liquid into an appropriate closed container (see Section 7: Handling and Storage). Clean up residual material as appropriate. Absorb with an inert absorbent. Decontaminate tools and equipment following cleanup. The material should be properly packaged and disposed of in compliance with applicable regulations.

Environmental and Regulatory Reporting:
Prevent material from entering public sewer system or any waterways. Do not flush to drain. Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies. Dispose of as a hazardous waste.

7. HANDLING AND STORAGE

Minimum/Maximum Storage Temperatures:
Not Available

Handling:
Personnel handling this product should be thoroughly trained as to its hazards. Do not breathe vapors and mists. Do not get on skin or in eyes. Do not ingest. Use nonsparking tools and grounded/bonded equipment and containers when transferring. Keep containers closed when not being used.

Storage:
Certain state and local regulations may limit storage quantities, arrangements and locations. These regulations should be considered for storage and handling of this and any other flammable liquid. Store in an area that is clean, cool, dry, well-ventilated, away from ignition sources, away from incompatible materials (see Section 10. Stability and Reactivity), away from foodstuffs or animal feed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Introductory Remarks:
These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

Exposure Guidelines:
Exposure limits represent regulated or recommended worker breathing zone concentrations measured by validated sampling and analytical methods, meeting the regulatory requirements. The following limits apply to this material, where, if indicated, S=skin and C=ceiling limit:

BUTANOL

	Notes	TWA	STEL
ACGIH		20 ppm	
OSHA	C,S	150 mg/cu m	
OSHA	C,S	50 ppm	

Engineering Controls:
Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: enclosed system design, local exhaust ventilation at the point of generation.

Respiratory Protection:
When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Eye/Face Protection:
Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

Skin Protection:
Skin contact must be prevented through the use of permeation resistant clothing, gloves and footwear, selected with regard for use conditions and exposure potential. An emergency shower must be readily accessible to the work area. Consideration must be given both to durability as well as permeation resistance.

Work Practice Controls:
Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

(1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
(2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
(3) Wash exposed skin promptly to remove accidental splashes or contact with this material.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product Information phone number in Section 1 for its exact specifications.

Physical Appearance:
clear, colorless / liquid.

Odor:
characteristic odor.

pH:
Not Applicable

Specific Gravity:
0.886 at 20 C (68 F).

Density:
0.886 g/ml at 20 C (68 F).

Water Solubility:
slightly soluble 0.11 wt/wt% at 25 C (77 F).

Melting Point Range:
-123 C (-189 F)

Freezing Point Range:
-123 C (-189 F)

Boiling Point Range:
78 C (172 F) at 760 mmHg

Vapor Pressure:
100 mmHg at 24 C (75 F)

Vapor Density:
3.2

Viscosity:
viscosity (centipoises) : 43 to 45 cps at 20 C (68 F).

Molecular Weight:
92.6

10. STABILITY AND REACTIVITY

Chemical Stability:
This material is stable under normal handling and storage conditions described in Section 7.

Conditions To Be Avoided:
heat
open flame
spark
static electricity

Materials/Chemicals To Be Avoided:
strong oxidizing agents

The Following Hazardous Decomposition Products Might Be Expected:

Decomposition Type: thermal
phosgene
oxides of carbon
chloride fumes

Hazardous Polymerization Will Not Occur.

Avoid The Following To Inhibit Hazardous Polymerization:
not applicable

11. TOXICOLOGICAL INFORMATION

Acute Eye Irritation:
Toxicological Information and Interpretation:
eye - eye irritation, rabbit. May cause significant irritation to the eyes.

Acute Skin Irritation:
Toxicological Information and Interpretation:
skin - skin irritation, 500 mg/24 hr, rabbit. Mildly irritating.
skin - sensitization, guinea pig.
Grade I - weak skin sensitizer.

Acute Dermal Toxicity:
Toxicological Information and Interpretation:
LD50 - lethal dose 50% of test species, 20000 mg/kg, rabbit.

Acute Respiratory Irritation:
No test data found for product.

Acute Inhalation Toxicity:
Toxicological Information and Interpretation:
LC50 - lethal concentration 50% of test species, 120 mg/l/1 hr, rat.

Acute Oral Toxicity:
Toxicological Information and Interpretation:
LD50 - lethal dose 50% of test species, 2670 mg/kg, rat.

Chronic Toxicity:
This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

Toxicological Information and Interpretation - MUTAGENICITY, **. Mouse Lymphoma Positive.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information:
No data found for product. May cause adverse environmental impact if material reaches waterways.

Chemical Fate Information:
No data found for product.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Method:
Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

Container Handling and Disposal:
Any containers or equipment used should be decontaminated immediately after use. Consult state and local regulations regarding the proper disposal of container.

EPA Hazardous Waste - YES

EPA RCRA HAZARDOUS WASTE CODES:
"I" Ignitable.

14. TRANSPORTATION INFORMATION

Transportation Status: IMPORTANT! Statements below provide additional data on listed DOT classification.
The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

US Department of Transportation
Hazard Class..... 3
Shipping Name:
CHLOROBUTANES
ID Number..... UN1127
Packing Group.... II
Labels..... FLAMMABLE LIQUID
Emergency Guide #.... 130

15. REGULATORY INFORMATION

Inventory Status

Inventory	Status
UNITED STATES (TSCA)	Y
CANADA (DSL)	Y
EUROPE (EINECS/ELINCS)	Y
AUSTRALIA (AICS)	Y
JAPAN (MITI)	Y
SOUTH KOREA (KECL)	Y

Y = All ingredients are on the inventory.
E = All ingredients are on the inventory or exempt from listing.
P = One or more ingredients fall under the polymer exemption or are on the no longer polymer list. All other ingredients are on the inventory or exempt from listing.
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS

Inventory Issues:
All functional components of this product are listed on the TSCA Inventory.

SARA Title III Hazard Classes:

Fire Hazard	- YES
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- NO

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substances

Ingredient	CERCLA/SARA RQ	SARA EHS TPQ
BUTANOL	5000 lbs	

STATE REGULATIONS:
This product does not contain any components that are regulated under California Proposition 65.

16. OTHER INFORMATION

National Fire Protection Association Hazard Ratings--NFPA(R):

2 Health Hazard Rating--Moderate
3 Flammability Rating--Serious
1 Instability Rating--Slight

National Paint & Coating Hazardous Materials Identification System--HMIS(R):

2 Health Hazard Rating--Moderate
3 Flammability Rating--Serious
1 Reactivity Rating--Slight

Reason for Revisions:
Change and/or addition made to Section 3, Section 4, Section 8, Section 11, Section 13.

Key Legend Information:
ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
TLV - Threshold Limit Value
PEL - Permissable Exposure Limit
TWA - Time Weighted Average
STEL - Short Term Exposure Limit
NTP - National Toxicology Program
IARC - International Agency for Research on Cancer
ND - Not determined
RHODIA - Rhodia Established Exposure Limits

Disclaimer:
The information herein is given in good faith but no warranty, expressed or implied, is made.

**** End of MSDS Document ****