

SAFETY DATA SHEET

Preparation Date: 1/17/2014

Revision Date: 1/17/2014

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: B1185
Product Name: BUTYL ALCOHOL, REAGENT, ACS

Other means of identification

Synonyms: 1-Butanol
 1-Butyl alcohol
 1-Hydroxybutane
 Alcool butylique (French)
 Butan-1-ol
 Butanol
 Butyl hydroxide
 Butyric or normal primary butyl alcohol
 Hemostyp
 Methylolpropane
 n-Butan-1-ol
 n-Butanol
 n-Butyl alcohol
 Propylcarbinol
 Propylmethanol
CAS #: 71-36-3
RTECS # EO1400000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: Solvent. Chemical intermediate. Stabilizer.
Uses advised against No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Regina Wachenheim (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity - Oral	Category 4
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Product code: B1185

Product name: BUTYL ALCOHOL,
 REAGENT, ACS

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Acute toxicity - Inhalation (Gases)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 1
Flammable liquids	Category 3

Label elements

Danger

Hazard statements

Harmful if swallowed
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation. May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure
Flammable liquid and vapor



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful in contact with skin.

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/ .? /equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool

Precautionary Statements - Response

Specific treatment (see .? on this label)
In case of fire: Use CO2, dry chemical, or foam to extinguish.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Butyl Alcohol 71-36-3	71-36-3	100	*

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention. If skin irritation persists, call a physician.

Eye Contact:

Flush eye with water for 15 minutes. Get medical attention.

Inhalation:

Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion:

Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms

Irritating to eyes, respiratory system and skin. Central nervous system effects. Hearing impairment.

Indication of any immediate medical attention and special treatment needed

Notes to Physician:

Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media:

Carbon dioxide (CO₂). Dry chemical. Alcohol-resistant foam. Water spray.

Unsuitable Extinguishing Media:

Do not use a solid (straight) water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Hazardous Combustion Products:

Carbon monoxide; Carbon dioxide

Specific hazards:

Flammable. May be ignited by heat, sparks or flames. Material can burn with invisible flame. Vapor may travel considerable distance to source of ignition and flash back. Vapors may form explosive mixtures with air. Most vapors are heavier than air. They will spread along the ground and collect in low or confined areas (sewers, basements, tanks). Container explosion may occur under fire conditions or when heated. Fire may produce irritating, corrosive and/or toxic gases.

Special Protective Actions for Firefighters

Specific Methods:

Water mist may be used to cool closed containers. For larger fires, use water spray or fog. Cool containers with flooding quantities of water until well after fire is out.

Special Protective Equipment for Firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:

Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Remove all sources of ignition. Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use spark-proof tools and explosion-proof equipment. In case of large spill, water spray or vapor suppressing foam may be used to reduce vapors, but may not prevent ignition in closed spaces.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas. In case of large spill, dike if needed. Dike far ahead of liquid spill for later disposal.

Methods and material for containment and cleaning up

Methods for containment

Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth).

Methods for cleaning up

Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Use clean non-sparking tools to collect absorbed material. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Remove all sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Use only in well-ventilated areas. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. When using do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities**Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Keep away from heat and sources of ignition. Store in a segregated and approved area. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents. Acids. Alkali Metals. Halogens. Aluminum. caustics. isocyanates.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters**National occupational exposure limits****United States**

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Butyl Alcohol - 71-36-3	100 ppm TWA 300 mg/m ³ TWA	50 ppm Ceiling 150 mg/m ³ Ceiling	20 ppm TWA	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Butyl Alcohol - 71-36-3	20 ppm TWA 60 mg/m ³ TWA	15 ppm TWA 30 ppm Ceiling	20 ppm TWA	50 ppm Ceiling 152 mg/m ³ Ceiling

Australia and Mexico

Components	Australia	Mexico
Butyl Alcohol 71-36-3	None	50 ppm Peak 150 mg/m ³ Peak

Appropriate engineering controls**Engineering measures to reduce exposure:**

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment**Personal Protective Equipment**

Eye protection: Goggles. Safety glasses with side-shields.

Skin and body protection: Chemical resistant apron. Long sleeved clothing. Gloves.

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

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Physical state: Liquid.	Appearance: No information available	Color: Clear. Colorless.
Odor: Rancid. Sweet. Strong. Characteristic. Mildly alcoholic. Similar to Amyl alcohol.	Taste Dry, burning taste.	Formula: CH ₃ (CH ₃) ₃ OH
Molecular/Formula weight: 74.12	Flash point (°C): 37	Flashpoint (°C/°F): 37 °C/98 °F
Flash Point Tested according to: Closed cup	Lower Explosion Limit (%): 1.4%	Upper Explosion Limit (%): 11.2%
Autoignition Temperature (°C/°F): 343 °C/650 °F	pH: No information available	Melting point/range(°C/°F): -89.8 °C/-129.64 °F
Boiling point/range(°C/°F): 117 °C/343 °F	Decomposition temperature(°C/°F): No information available	Specific gravity: 0.8-0.81
Density (g/cm³): No information available	Bulk density: No information available	Vapor pressure @ 20°C (kPa): No information available
Evaporation rate: 0.46 (butyl acetate = 1)	Vapor density: 2.6	VOC content (g/L): 800
Odor threshold (ppm): 0.83	Partition coefficient (n-octanol/water): 0.88	Viscosity: No information available
Miscibility: Miscible with Ethanol Miscible with Ether Miscible with many organic solvents	Solubility: Soluble in Water Solubility in water: 63.2 g/L @ 25 °C	

10. STABILITY AND REACTIVITY

Reactivity

It may react with aluminum at temperatures above 49 degrees C (120 degrees F)

Chemical stability

Stability: Stable at normal conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Oxidizing agents. Acids. Alkali Metals. Halogens. Aluminum. caustics. isocyanates.

Hazardous decomposition products: Carbon monoxide. Carbon dioxide. When heated to decomposition it emits acrid smoke and irritating fumes.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:

Ingestion. Skin. Eyes. Inhalation.

Acute Toxicity

Component Information

Butyl Alcohol - 71-36-3

LD50/oral/rat = 790 mg/kg Oral LD50 Rat (LOLI and RTECS)
4360 mg/kg (RTECS)

LD50/oral/mouse = 100 mg/kg (RTECS)

LD50/dermal/rabbit = 3400 mg/kg

LD50/dermal/rat = No information available

LC50/inhalation/rat = 8000 ppm Inhalation LC50 Rat 4 h

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information =

3484 mg/kg Oral LD50 Rabbit (RTECS)

1200 mg/kg Oral LD50 Hamster (RTECS)

1782 mg/kg Oral LD50 Dog (RTECS)

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 790mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 100mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = 3400mg/kg

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = > 17.7mg/l (4-hr)

VALUE-Gas = 8000ppm (4-hr)

VALUE-Dust/Mist = 24mg/l (4-hr.)

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact:

Contact causes skin irritation. Moderately irritating to the skin. It may be absorbed through the skin. If absorbed through skin it may cause systemic effects with symptoms similar to those of ingestion.

Eye Contact:

Causes eye irritation. Severe eye irritation. Possible eye damage.

Inhalation	Harmful by inhalation. Irritating to respiratory system. Symptoms may include coughing and shortness of breath. Symptoms may include coughing and wheezing. May affect respiration (respiratory depression). May cause conjunctival irritation. May cause nausea, vomiting. May cause headache. Inhalation of high concentrations of vapors may cause dizziness or suffocation. May affect behavior/central nervous system (dizziness, somnolence, muscle weakness, ataxia). It may affect the liver. It may affect the blood (changes in serum composition). It may affect the blood (changes in white blood cell count, changes in other cell count).
Ingestion	Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. May cause gastritis. May affect the cardiovascular system (change in heart rate). It may affect the liver (fatty liver degeneration). May affect urinary system (kidneys). May affect the blood. May affect respiration (shortness of breath).
Aspiration hazard	No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity	Prolonged or repeated skin contact may cause dermatitis, and dryness and cracking of the skin.. Prolonged or repeated inhalation of high concentrations may cause hearing impairment, with auditory nerve damage and vestibular system injury, and severe vertigo (diagnosed as Meniere's disease). Prolonged or repeated inhalation may affect the brain. Prolonged or repeated inhalation may affect the liver. Prolonged or repeated inhalation may affect the kidneys. Prolonged or repeated ingestion may affect behavior/central nervous system (somnolence, ataxia, muscle weakness). Prolonged or repeated ingestion may affect the blood (changes in red blood cell count). Prolonged or repeated inhalation may affect the adrenal gland. Prolonged or repeated ingestion may affect the adrenal gland.
Sensitization:	No information available
Mutagenic Effects:	No information available
Carcinogenic effects:	Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Butyl Alcohol	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

<u>Reproductive toxicity</u>	<u>No data is available</u>
Reproductive Effects:	No information available
Developmental Effects:	May cause developmental effects based on animal data. Possible risk of harm to the unborn child. No information on developmental toxicity effects on humans was found.
Teratogenic Effects:	There is limited and equivocal evidence that Butyl alcohol is a teratogen in animals. It has not been shown to cause teratogenic effects in humans.
<u>Specific Target Organ Toxicity</u>	
STOT - single exposure	respiratory system.
STOT - repeated exposure	Causes damage to organs through prolonged or repeated exposure:. Skin. Eyes. Ears. central nervous system. kidney. liver.
Target Organs:	Skin. Eyes. Central nervous system. Kidneys. Liver. Ears. Auditory nerve. Respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Butyl Alcohol - 71-36-3

Freshwater Algae Data: 500 mg/L EC50 *Desmodesmus subspicatus* 72 h

500 mg/L EC50 *Desmodesmus subspicatus* 96 h

Freshwater Fish Species Data: 100000-500000 µg/L LC50 *Lepomis macrochirus* 96 h static 1

1730-1910 mg/L LC50 *Pimephales promelas* 96 h static 1

1740 mg/L LC50 *Pimephales promelas* 96 h flow-through 1

1910000 µg/L LC50 *Pimephales promelas* 96 h static 1

Water Flea Data: 1897 - 2072 mg/L EC50 *Daphnia magna* 48 h

1983 mg/L EC50 *Daphnia magna* 48 h

Persistence and degradability: Readily biodegradable

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is low.

Mobility: It is expected to have high mobility in soil.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Butyl Alcohol	None	None	None	U031 Ignitable waste

14. TRANSPORT INFORMATION

DOT

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: Not applicable
Packing Group: III
Marine Pollutant: No data available
ERG No: 129
DOT RQ (lbs): No information available
Symbol(s): R5

TDG (Canada)

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3

Product code: B1185

Product name: BUTYL ALCOHOL,
REAGENT, ACS

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14. TRANSPORT INFORMATION

Subsidiary Risk: No information available
Packing Group: III
Description: No information available

ADR

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Packing Group: III
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
Description: No information available
IMDG Page: No information available
Marine Pollutant No information available
EMS: F-E
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: 3
Packing Group: III
Classification Code: No information available
Description: No information available

ICAO

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
Description: No information available

IATA

UN-No: UN1120
Proper Shipping Name: Butanols
Hazard Class: 3
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 3L
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Product code: B1185

Product name: BUTYL ALCOHOL,
REAGENT, ACS

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Components	U.S. TSCA	Philippines (PICCS)	KOREA KECL	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Butyl Alcohol</i>	Present	Present	Present KE-03867	Present (2)-3049	Present	Present	Present 200-751-6

U.S. Regulations

Butyl Alcohol

Massachusetts RTK: Present
New Jersey RTK Hazardous Substance List: Present
New Jersey (EHS) List: Present
New Jersey - Discharge Prevention - List of Hazardous Substances: Present
Pennsylvania RTK: Present
Minnesota - Hazardous Substance List: Present
New York Release Reporting - List of Hazardous Substances:
 5000 lb RQ
 1 lb RQ
Louisiana Reportable Quantity List for Pollutants: Listed
California Directors List of Hazardous Substances: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
<i>Butyl Alcohol</i>	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
<i>Butyl Alcohol</i>	5000 lb final RQ 2270 kg final RQ	None	None	None	1.0 % de minimis concentration

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
<i>Butyl Alcohol</i>	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

B2 Flammable liquid
 D2B Toxic materials

Butyl Alcohol

B2 D2B

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
<i>Butyl Alcohol</i>	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Butyl Alcohol	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Butyl Alcohol	Not listed	Not listed

EU Classification

R-phrases

R10 - Flammable.
R22 - Harmful if swallowed.
R41 - Risk of serious damage to eyes.
R67 - Vapors may cause drowsiness and dizziness.
R37/38 - Irritating to respiratory system and skin.

S-phrases

S7 - Keep container tightly closed.
S9 - Keep container in a well-ventilated place.
S13 - Keep away from food, drink and animal feedingstuffs.
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 - Wear suitable gloves.
S39 - Wear eye/face protection.
S46 - If swallowed, seek medical advice immediately and show this container or label.

Components	Classification	Concentration Limits:	Safety Phrases
Butyl Alcohol	R10 Xn; R22 Xi; R37/38-41 R67	No information	S2 S7/9 S13 S26 S37/39 S46

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xn - Harmful.
Xi - Irritant.

Xn



Xi



16. OTHER INFORMATION

16. OTHER INFORMATION**NFPA****HMIS****Personal Protective Equipment**

Health Hazard	2
Fire Hazard	3
Reactivity	0

**See Section 8.**

Preparation Date: 1/17/2014
Revision Date: 1/17/2014
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) 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 SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. 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 SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Material Safety Data Sheet