

**Section 1: Product & Company Information**

**Product Identifier:** n-Butyl Alcohol

**Other Means of Identification**

Product Number: 151013

**Recommended Use and Restrictions on Use**

Recommended Use: Chemical intermediate. Industrial Solvent.

Restrictions on Use: We recommend that this product be used in a manner consistent with the listed uses. If your use is not consistent with the stated use, please contact your sales or technical service representative.

**Manufacturer / Importer / Supplier / Distributor Information**

**Company Name:** CORECHEM Inc.

**Address:** 4320 Greenway Drive  
Knoxville, TN 37918  
USA

**Information Telephone Number:** 1-865-524-4239

**Fax Number:** 1-865-524-3375

**Website:** www.corecheminc.com

**Contact Person:** Regulatory Manager

**E-mail:** regulatory@corecheminc.com

**Emergency Phone Number:** Chemtrec® 1-800-424-9300 / Outside USA 1-703-527-3887 (monitored 24 hours/day)

**Section 2: Hazards Identification**

**GHS Hazard Classification(s)**

In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200 (HazCom 2012).

**Physical Hazard(s)**

Flammable, Liquids - 3

**Health Hazard(s)**

Acute Toxicity, Oral - 4

Corrosion/Irritation, Skin - 2

(Corrosion)Damage/Irritation, Eye - 1

Specific Target Organ Toxicity (STOT)-CNS, Single exposure - 3

Specific Target Organ Toxicity (STOT), Repeated exposure - 2

**Environmental Hazard(s)**

Not classified.

**Label Elements**

**Signal Word**

**DANGER**

**Hazard Symbol(s)**



**Hazard Statement(s)**

H226: Flammable liquid and vapor.

H302: Harmful if swallowed.

H315: Causes skin irritation.

H318: Causes serious eye damage.

H335: May cause respiratory irritation.

H336: May cause drowsiness or dizziness.

**Precautionary Statements**

**General**

Not applicable.

**Prevention**

P210: Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233: Keep container tightly closed.

P240: Ground/bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting/equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.

P264: Wash face, hands and any exposed skin thoroughly after handling.  
 P270: Do not eat, drink or smoke when using this product.  
 P271: Use only outdoors or in a well-ventilated area.  
 P280: Wear protective gloves/protective clothing/eye protection/face protection.

### Response

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
 P302 + P352: IF ON SKIN: Wash with plenty of soap and water.  
 P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304 + P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.  
 P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 P310: Immediately call a POISON CENTER or doctor/physician.  
 P312: Call a POISON CENTER or doctor/physician if you feel unwell.  
 P314: Get medical advice/attention if you feel unwell.  
 P321: Specific treatment (see supplemental first aid instructions on this label).  
 P330: Rinse mouth.  
 P332 + P313: If skin irritation occurs: Get medical advice/attention.  
 P362: Take off contaminated clothing and wash before reuse.  
 P370 + P378: In case of fire: Use suitable extinguishing media for extinction.

### Storage

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.  
 P403 + P235: Store in a well-ventilated place. Keep cool.  
 P405: Store locked up.

### Disposal

P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

### Hazard(s) not otherwise classified (HNOC)

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.  
 Sparks may ignite liquid and vapor.  
 May cause flash fire or explosion.

## Section 3: Composition/Information on Ingredients

### Substance

Chemical Identity <sup>2</sup>	Common Name/Synonym(s)	CAS # <sup>3</sup>	Weight %	Impurity or Stabilizing Additive
n-Butyl Alcohol	Butanol	71-36-3	99 – 100%	No

1. Information regarding the composition and the percent ranges of the mixtures ingredients are not presented as it Confidential Business Information (CBI). Where a medical emergency exists (as determined by medical professional), timely disclosure of CBI is assured. The information omitted pertains to only the names of the substances and the concentration in the mixture (product) and can only be requested by a doctor/physician or Local/State/Provincial or Federal Authority.

2. Non-hazardous ingredients are not presented as to protect the proprietary formula of the product.

3. "—"Indicates ingredient is a mixture and contains multiple ingredients or may have no identifying CAS number.

## Section 4: First-Aid Measures

### General Information

Call a poison center/doctor/physician if you feel unwell.

### Inhalation

Remove to fresh air. If not breathing, apply artificial respiration. If breathing is difficult give oxygen provided a qualified individual is present. Get medical assistance if symptoms persist.

### Skin Contact

Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse or discard if they cannot be thoroughly cleaned. Get medical assistance if irritation persists.

### Eye Contact

Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do so. Continue rinsing. Do not apply neutralizing agents. Get immediate medical attention.

### Ingestion

Do NOT induce vomiting unless directed to do so by medical personnel. If vomiting occurs, naturally, have the victim lean forward to reduce the risk of aspiration. If victim is conscious and alert, rinse their mouth with water. Never give anything by mouth to an unconscious person. Get medical attention.

### Most important symptoms/effects, acute and delayed

#### Symptoms

Irritating to eyes, respiratory system and skin. Causes serious eye damage. Narcotic effect.

### Indication of immediate medical attention and special treatment needed

#### Hazards

Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea.

#### Treatment

Maintain adequate ventilation and oxygenation of the patient. Because rapid absorption may occur thru the lungs if aspirated and cause systemic affects. The decision of whether to induce vomiting or not should be left up to the physician. If lavage is performed suggest endotracheal and/or esophageal control. Danger from lung

aspiration must be weighed against toxicity when considering emptying the stomach. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient. Skin contact may aggravate preexisting dermatitis.

## Section 5: Fire-Fighting Measures

### General Fire Hazards

Flammable liquid and vapor.

### Suitable (and Unsuitable) Extinguishing Media

#### Suitable Extinguishing Media

Use dry chemical or carbon dioxide for small fires, and alcohol resistant foam or water fog for large fires.

#### Unsuitable Extinguishing Media

Water may be ineffective in fighting the fire, as materials are lighter and could float on water and spread the fire.

### Specific Hazards Arising from the Chemical

Reacts violently with (strong) oxidizers. Increased risk of fire and explosion. Violent exothermic reaction with some acids. Violent to explosive reaction with (Some) Halogens.

### Special Protective Equipment and Precautions for Firefighters

#### Special Fire-Fighting Equipment Procedures

Exposure to fire/heat: Keep upwind. Exposure to fire/heat: Consider evacuation. Exposure to fire/heat: Seal off low lying areas. Exposure to fire/heat: have neighborhood close doors and windows. Cool tanks and drums with water spray. Remove them into safety. Heat/fire exposure: compressed air/oxygen apparatus.

#### Special Protective Equipment for Fire-Fighters

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective firefighting clothing. (Includes firefighting helmet, coat, trousers, boots, and gloves.) Avoid contact with this material during firefighting operations. If contact is likely change to a full chemical resistant firefighting clothing with self-contained breathing apparatus. If this is not available wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. If protective equipment is not available or not used fight fire from a protected location or safe distance.

## Section 6: Accidental Release Measures

### Personal Precautions, Protective Equipment and Emergency Procedures

Avoid contact with skin, eyes and clothing. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Keep unnecessary personnel away. Remove all sources of ignition. Wear personnel protective equipment.

### Methods and Materials for Containment and Clean-Up

Absorb with inert materials and place into appropriate containers for disposal. For large spills, flush area with water spray to disperse vapors and dilute spill to a non-flammable mixture. Take up liquid spill into a noncombustible material e.g. sand, earth, vermiculite, kieselguhr, and powdered limestone. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling. Dispose of materials or solid residues at an authorized site.

### Notification Procedures

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

### Environmental Precautions

Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## Section 7: Handling and Storage

### Precautions for Safe Handling

Use spark/explosion proof appliances and lighting system. Use earthed equipment. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Carry operations in the open/under local exhaust ventilation or with respiratory protection. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Keep container tightly closed.

### Conditions for Safe Storage, including any Incompatibilities

Ground and bond container and receiving equipment. Store in a well-ventilated place. Keep cool. Keep container tightly closed store locked up. Keep substance away from heat sources, ignition sources, oxidizing agents, and strong acids or halogens. Store in a dry area, out of direct sunlight. Ventilation at floor level. Fireproof storeroom. Provide for a tub to collect spills. Provide the tank with earthing. Store only in a limited quantity. SPECIAL REQUIREMENTS: closing, clean, correctly labeled, meet the legal requirements. Secure fragile packaging in solid containers. SUITABLE MATERIALS: steel, stainless steel, Monel steel, iron, copper, bronze, polypropylene, glass. Materials to avoid: aluminum and PVC.

## Section 8: Exposure Controls/Personal Protection

### Control Parameters

#### Occupational Exposure Limits

Chemical Identity	Type	Value	Source
n-Butyl Alcohol	TWA	100 ppm	US OSHA Table Z-1
n-Butyl Alcohol	Ceiling	50 ppm	US OSHA Table Z-1
n-Butyl Alcohol	TWA	300 mg/m <sup>3</sup>	OSHA
n-Butyl Alcohol	TWA	20 ppm	US. ACGIH Threshold Limit Values

#### Biological Limit Values

The product does not contain any relevant quantities of hazardous materials with assigned biological limit values.

#### Engineering Controls:

Ensure good ventilation of the work station to keep airborne concentrations low. An emergency eyewash/shower must be readily accessible to the work area.

## Individual protection measures, such as personal protective equipment (PPE)

### General Information

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

### Eye/Face Protection

Wear safety glasses with side shields.

### Skin Protection

#### Hand Protection

Wear chemical resistant gloves. Contact health and safety professional or manufacturer for specific information. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to; other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials as well as the instructions/ specifications provided by the glove supplier.

#### Other

Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task.

### Respiratory Protection

Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limits requirements or guidelines, use an approved respirator. Selection of air purifying or positive pressure supplied- air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive- pressure self-contained breathing apparatus. The following should be effective types of air purifying respirators: Organic vapor cartridges.

### Hygiene Measures

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated footwear that cannot be cleaned. Wash hands before breaks and immediately after handling the product. Wash contaminated clothing before reuse. Avoid contact with eyes, skin, and clothing.

## Section 9: Physical and Chemical Properties

### Appearance:

Physical State: Liquid  
Color: Colorless

### Odor:

Alcohol

### Odor Threshold:

0.83 ppm

### pH:

No data available

### Melting Point/Freezing Point:

-89°C (-130 °F)

### Initial Boiling Point and Boiling Range:

118 °C

### Flash Point:

36°C (Closed Cup)

### Specific Gravity

810 kg/m<sup>3</sup>

### Evaporation Rate (butyl acetate=1):

0.5

### Flammability (solid, gas):

No data available

### Upper/Lower Limit on Flammability or Explosive Limits

Flammability Limit – Upper: 11.3 % (V)

Flammability Limit – Lower: 1.5 % (V)

Explosive Limit – Upper: 12% Vol Literature

Explosive Limit – Lower: 1.7% Vol Literature

### Vapor Pressure:

4.4 mmHg

### Vapor Density (air =1):

2.56

### Relative Density (water=1):

0.81 (20 °C) 4 °C

### Solubility(ies):

Solubility in water: 66 g/L at 20°C (68°F)

Solubility (other): No data available

### Partition coefficient (n-octanol/water):

Log Pow: 1 OECD Guideline 117 (partition coefficient (n-octanol /water), HPLC method.

### Auto-Ignition Temperature:

343 °C (671 °F) Literature

### Decomposition Temperature:

No data available

### Viscosity:

Kinematic: 3.642 mm<sup>2</sup>/s

Dynamic: 2.95 mPa.s

### Dynamic Viscosity:

2.947 mPa.s at 20 °C (68°F) Literature

### Oxidizing properties:

No

### Liquid Density:

0.81 g/cm<sup>3</sup> at 20 °C (68°F) Literature

### Percent volatility:

100% Literature

### Surface tension:

69.9 mN/m at 20 °C (68 °F) Literature

### Other Information:

Molecular Weight: 74.12 g/mol

Formula: C<sub>4</sub>H<sub>10</sub>O

## Section 10: Stability and Reactivity

### Reactivity

Stable at normal ambient temperature and pressure.

### Chemical Stability

Material is stable under normal conditions.

#### Possibility of Hazardous Reactions

*Oxidizing materials can cause a vigorous reaction. Polymerization will not occur.*

#### Conditions to Avoid

*Avoid contact with hot surfaces. Heat, no flames no sparks. Eliminate all sources of ignition.*

#### Incompatible Materials

*Avoid contact with: Halogens. Strong acids. Strong oxidizers.*

#### Hazardous Decomposition Products

*Carbon Oxides.*

## Section 11: Toxicological Information

#### Information on routes of exposure

**Ingestion:** *Harmful if swallowed.*

**Inhalation:** *May cause irritation to the respiratory system. May cause drowsiness or dizziness.*

**Skin Contact:** *May be harmful in contact with skin. Causes skin irritation.*

**Eye Contact:** *Causes serious eye damage.*

#### Information on Toxicological Effects

##### Acute Toxicity (List all possible routes of exposure)

###### Oral

*n-Butyl Alcohol: LD50 (Rat): 2,292 mg/kg*

###### Dermal

*n-Butyl Alcohol: LD50 (Rabbit) male: 3,430 mg/kg*

###### Inhalation

*n-butyl Alcohol: LC50(Rat, male and female) > 17.76 mg/l*

##### Repeated Dose Toxicity

*No data available.*

#### Skin Corrosion/Irritation

*Brief contact may cause skin irritation with local redness. Prolonged contact may cause severe skin irritation with local redness and discomfort. May cause drying and flaking of the skin.*

#### Serious Eye Damage/Eye Irritation

*May cause severe eye irritation. May cause moderate corneal injury. Vapor may cause eye irritation experienced as mild discomfort and redness.*

#### Respiratory/Skin Sensitization

*Did not cause allergic skin reactions when tested in guinea pigs.*

#### Carcinogenicity

##### IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

*No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.*

##### US. National Toxicology Program (NTP) Report on Carcinogens

*No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.*

##### US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1052)

*No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.*

#### Germ Cell Mutagenicity

##### In Vitro

*Studies were negative. Animal genetic toxicity studies were negative.*

##### In Vivo

*No data available.*

#### Reproductive Toxicity

*No data available.*

#### Specific Target Organ Toxicity – Single Exposure

*Narcotic effect. Respiratory tract irritation.*

#### Specific Target Organ Toxicity – Repeated Exposure

*Blood, Central nervous system. – May cause damage to organs through prolonged or repeated exposure.*

#### Aspiration Hazard

*May be harmful if swallowed and enters airway.*

#### Teratogenicity

*n-Butanol has caused birth defects and has been toxic to the fetus in laboratory animals at doses nontoxic to the mother. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.*

#### Other Effects

*None known.*

## Section 12: Ecological Information

### Ecotoxicity

#### Acute Hazards to the Aquatic Environment

##### Fish

*Butan-1-ol; n-butanol: LC50 (Fathead Minnow, 96 h): 1,376 mg/l*

##### Aquatic Invertebrates

*n-Butyl Alcohol: LC50 (Water Flea (Daphnia magna), 24 h): 1,328 mg/l Mortality*

##### Toxicity to Aquatic Plants

*n-butyl alcohol: EC50 (Pseudokirchneriella subcapitata (Green algae) 225 mg/L*

*n-butyl alcohol: EC50 (Pseudomonas putida) Static test, 17 hours, growth inhibition: >1000 mg/l*

#### Chronic Hazards to the Aquatic Environment

##### Fish

*No data available.*

##### Aquatic Invertebrates

*No data available.*

##### Toxicity to Aquatic Plants

*No data available.*

### Persistence and Degradability

#### Biodegradation

*Material is readily biodegradable. Passes OECD test(s) for ready biodegradability.*

*10-day Window: Pass*

#### BOD/COD Ratio

*BOD-5: 1,710 mg/g*

*BOD-20: 1,890 mg/g*

### Bioaccumulative Potential

#### Bioconcentration Factor (BCF)

*0.38 (Static)*

#### Partition Coefficient n-octanol / water (log Kow)

*1 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water) HPLC method, 25 °C)*

### Mobility in Soil

*Highly Mobile in soil. May be harmful to plant growth, blooming and fruit formation.*

### Other Adverse Effects

*The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.*

## Section 13: Disposal Considerations

### Disposal Instructions

*Do not discharge into surface water. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together as this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous wastes shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Incinerate under surveillance with energy recovery. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants. Flammable vapors may accumulate in the container.*

### Contaminated Packaging

*Handle contaminated packages in the same way as the substance itself. Emptied containers may retain hazardous residue and explosive vapors. Keep away from heat, sparks, and flames. Do not cut, puncture, or weld on or near this container. Follow label warnings until container is thoroughly cleaned or destroyed.*

## Section 14: Transportation Information

### US Department of Transportation (DOT)

*UN Number: UN1120*

*UN Proper Shipping Name: Butanol's*

*Technical Name: -*

*Hazard Class: 3*

*Subsidiary Hazard Risk: -*

*Packing Group: II*

*DOT Label/Placard Exemptions: Not determined*

*Special Provisions: B1, IB3, T2, TP1*

*Packaging Exceptions: 49CFR 173.150*

*Packaging Non-Bulk: 49CFR 173.203*

*Packaging Bulk: 49CFR 173.242*

*Reportable Quantity (RQ): 5,000lb (2,270kg)*

*Marine Pollutant: No*

*Poison Inhalation Hazard: No*

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Emergency Response Guidebook (ERG) #: 129

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

## Section 15: Regulatory Information

### US Federal Regulations

#### Toxic Substance Control Act (TSCA), Chemical Substance Inventory, Section 8(b)

This product or ingredient(s) are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

#### Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substance List (40 CFR 302.4)

The following chemical(s) in this material are subject to reporting levels established by CERCLA:

n-Butyl Alcohol (CAS# 71-36-3)

#### Clean Air Act (CAA), Section 112(r)

No chemical(s) in this material are subject to the reporting requirements of CAA.

#### Emergency Planning and Community Right-To-Know Act (EPCRA)

##### EPCRA 302 Extremely Hazardous Substance

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 302.

##### EPCRA 304 Emergency Response Notification

No chemical(s) in this material are subject to the reporting requirements of SARA Title III, Section 304.

##### EPCRA 311/312 Emergency and Hazardous Materials Reporting

Fire Hazard: Yes

Sudden Release of Pressure: No

Reactive: No

Acute (Immediate) Health Hazard: Yes

Chronic (Delayed) Health Hazard: Yes

##### EPCRA 313 Toxic Chemical Release Inventory (TRI) Reporting

The following chemical(s) in this material are subject to reporting levels established by SARA Title III, Section 313:

n-Butyl Alcohol (CAS# 71-36-3)

### US State Regulations

#### California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65)

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

Important Note: Due to the changing nature of regulatory requirements, the information in this document should NOT be considered all-inclusive or authoritative. Users should make their own investigations to determine the suitability of the information for their particular purposes. International, Federal, State and Local regulations should be consulted to determine compliance with all required reporting requirements.

## Section 16: Other Information

### Hazardous Materials Identification System (HMIS®) Classification

Health Hazard: 3

Chronic Health Hazard: \*

Flammability: 3

Physical Hazard: 0

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

### National Fire Protection Association (NFPA 704) Rating

Health Hazard: 2

Fire Hazard: 3

Reactivity Hazard: 0

Special: N/A

(Hazard Rating: 0 – Minimal / 1 – Slight / 2 – Moderate / 3 – Serious / 4 – Severe)

Prepared By: Regulatory Manager

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Revisions: 3

### Key to Abbreviations and Acronyms

ATE - Acute Toxicity Estimate

BCF - Bioconcentration Factor

EC50 - Effective concentration, 50%

IDHL - Immediately Dangerous to Life and Health

Kg - Kilogram

l - Liter

lb - Pound

LC50 - Lethal Concentration, 50%

LD50 - Lethal Dose, 50%

ACGIH - American Conference of Industrial Hygienists

AIHA - American Industrial Hygiene Association

BEI - Biological Exposure Indices

CAS - Chemical Abstracts Service

DOT - US Department of Transportation

EPA - US Environmental Protection Agency

GHS - Globally Harmonized System of Classification and Labelling of Chemicals

IARC - International Agency for Research on Cancer

IATA - International Air Transport Association

mg - milligram

ml - milliliter

N/A - Not Applicable

N/D - Not Determined

PEL - Permissible Exposure Limit

REL - Recommended Exposure Limit

STEL - Short-term Exposure Limit

TWA - Time weighted average

IBC - Intermediate Bulk Container

IMDG - International Maritime Dangerous Goods

NIOSH - National Institute for Occupational Safety and Health

NTP - National Toxicology Program

OSHA - US Occupational Health and Safety Administration

SARA - US EPA Superfund Amendments and Reauthorization Act

TSCA - US EPA Toxic Substances Control Act

UN - United Nations

**References**

HSDB® - Hazardous Substances Data Bank

**Disclaimer**

*The information in this SDS was obtained from sources which we believe are reliable. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS. The conditions or methods of handling, storage, use, and disposal of the product are beyond our control and may be beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.*