Potassium tert-butoxide

sc-250768

Material Safety Data Sheet

Hazard Alert Code Key: EXTREME | HIGH | MODERATE | LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Potassium tert-butoxide

STATEMENT OF HAZARDOUS NATURE
CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA


SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800
EMERGENCY:
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C4-H9-K-O, (CH3)3COK, "potassium tert-butylate"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	3		
Toxicity:	2		
Body Contact:	4		
Reactivity:	2		
Chronic:	2		

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Spontaneously flammable in air.
Harmful if swallowed.
Causes severe burns.
Risk of serious damage to eyes.
Reacts violently with water liberating extremely flammable gases.
Highly flammable.
May cause fire.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ The material can produce severe chemical burns within the oral cavity and gastrointestinal tract following ingestion.
■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
■ Ingestion of alkaline corrosives may produce burns around the mouth, ulcerations and swellings of the mucous membranes, profuse saliva production, with an inability to speak or swallow.
Both the esophagus and stomach may experience burning pain; vomiting and diarrhea may follow.

EYE

■ The material can produce severe chemical burns to the eye following direct contact. Vapors or mists may be extremely irritating.
■ If applied to the eyes, this material causes severe eye damage.
■ Direct eye contact with corrosive bases can cause pain and burns.
There may be swelling, epithelium destruction, clouding of the cornea and inflammation of the iris.

SKIN

■ The material can produce severe chemical burns following direct contactwith the skin.
■ Skin contact is not thought to produce harmful health effects (as classified using animal models).
Systemic harm, however, has been identified following exposure of animals by at least one other route and the material may still produce health damage following entry through wounds, lesions or abrasions.
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ The material can cause respiratory irritation in some persons.
The body's response to such irritation can cause further lung damage.
■ Inhaling corrosive bases may irritate the respiratory tract.
Symptoms include cough, choking, pain and damage to the mucous membrane.
■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS

■ Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue.
Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.
Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
potassium tert-butoxide	865-47-4	100
hydrolysis yields		
tertiary butanol	75-65-0	
potassium hydroxide	1310-58-3	

Section 4 - FIRST AID MEASURES

SWALLOWED
· For advice, contact a Poisons Information Center or a doctor at once. · Urgent hospital treatment is likely to be needed.

EYE
■ If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. For THERMAL burns: · Do NOT remove contact lens · Lay victim down, on stretcher if available and pad BOTH eyes, make sure dressing does not press on the injured eye by placing thick pads under dressing, above and below the eye. · Seek urgent medical assistance, or transport to hospital.

SKIN
■ If skin or hair contact occurs: · Immediately flush body and clothes with large amounts of water, using safety shower if available. · Quickly remove all contaminated clothing, including footwear. In case of burns: · Immediately apply cold water to burn either by immersion or wrapping with saturated clean cloth. · DO NOT remove or cut away clothing over burnt areas. DO NOT pull away clothing which has adhered to the skin as this can cause further injury. · DO NOT break blister or remove solidified material. · Quickly cover wound with dressing or clean cloth to help prevent infection and to ease pain. · For large burns, sheets, towels or pillow slips are ideal; leave holes for eyes, nose and mouth. · DO NOT apply ointments, oils, butter, etc. to a burn under any circumstances. · Water may be given in small quantities if the person is conscious. · Alcohol is not to be given under any circumstances. · Reassure. · Treat for shock by keeping the person warm and in a lying position. · Seek medical aid and advise medical personnel in advance of the cause and extent of the injury and the estimated time of arrival of the patient.

INHALED
· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested. Inhalation of vapors or aerosols (mists, fumes) may cause lung edema. Corrosive substances may cause lung damage (e.g.

NOTES TO PHYSICIAN
■ For acute or short-term repeated exposures to highly alkaline materials:
· Respiratory stress is uncommon but present occasionally because of soft tissue edema.
· Unless endotracheal intubation can be accomplished under direct vision, cricothyroidotomy or tracheotomy may be necessary.
Depending on the degree of exposure, periodic medical examination is indicated. The symptoms of lung edema often do not manifest until a few hours have passed and they are aggravated by physical effort.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	0.975 @ 220 C
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA
■ For SMALL FIRES:
· Dry chemical, CO2, water spray or foam.
For LARGE FIRES:
· Foam, fog or water spray.

FIRE FIGHTING
· Alert Emergency Responders and tell them location and nature of hazard.
· May be violently or explosively reactive.
When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS
· May ignite on contact with air leading to spontaneous combustion and burning rapidly.
· May decompose explosively when heated or involved in fire.
Combustion products include: carbon dioxide (CO2), metal oxides, other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY
■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids,chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION
Glasses:
Full face- shield.
Gloves:
Respirator:
Type A-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS
· Drains for storage or use areas should have retention basins for pH adjustments and dilution of spills before discharge or disposal of material.
· Check regularly for spills and leaks.
· Eliminate all ignition sources.
· Cover with WET earth, sand or other non-combustible material.
· Use clean, non-sparking tools to collect absorbed material
· Wear gloves and safety glasses as appropriate.
MAJOR SPILLS
· Clear area of personnel and move upwind.
· Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING
· For large scale or continuous use, spark-free, earthed ventilation system venting directly to the outside and separate from usual ventilation systems
· Provide dust collectors with explosion vents.
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of overexposure occurs.
· Use in a well-ventilated area.
· Avoid smoking, naked lights or ignition sources.
· Avoid contact with incompatible materials.
· When handling, DO NOT eat, drink or smoke.
· Keep containers securely sealed when not in use.
· Avoid physical damage to containers.
· Always wash hands with soap and water after handling.
· Work clothes should be laundered separately and before re-use
· Use good occupational work practice.
· Observe manufacturer's storing/handling recommendations.
· Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
NOTE: The material may remove oxygen from the air thus producing a severe hazard to workers inside enclosed or confined spaces where the material might accumulate. Before entry to such areas, sampling and test procedures for low oxygen levels should be undertaken; control conditions should be established to ensure the availability of adequate oxygen supply.
Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.
· Do NOT cut, drill, grind or weld such containers.
· In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS
■ For low viscosity materials and solids: Drums and jerricans must be of the non-removable head type. Where a can is to be used as an inner package, the can must have a screwed enclosure.

STORAGE REQUIREMENTS
■ Store under an inert gas, e.g. argon or nitrogen.
FOR MINOR QUANTITIES:
· Store in an indoor fireproof cabinet or in a room of noncombustible construction
· Provide adequate portable fire-extinguishers in or near the storage area.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes
Canada - Ontario Occupational Exposure Limits	potassium tert-butoxide (Particles (Insoluble or Poorly Soluble) Not Otherwise)		10 (I)						
Canada - British Columbia Occupational Exposure Limits	potassium tert-butoxide (Particles (Insoluble or		10 (N)						

	Poorly Soluble) Not Otherwise Classified (PNOC))					
Canada - Ontario Occupational Exposure Limits	potassium tert-butoxide (Specified (PNOS) / Particules (insolubles ou peu solubles) non précisées par ailleurs)		3 (R)			
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	potassium tert-butoxide (Particulates not otherwise regulated Respirable fraction)		5			
US - California Permissible Exposure Limits for Chemical Contaminants	potassium tert-butoxide (Particulates not otherwise regulated Respirable fraction)		5			(n)
US - Oregon Permissible Exposure Limits (Z-1)	potassium tert-butoxide (Particulates not otherwise regulated (PNOR) (f) Total Dust)	-	10			Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means “particles not otherwise regulated.”
US - Michigan Exposure Limits for Air Contaminants	potassium tert-butoxide (Particulates not otherwise regulated, Respirable dust)		5			
US - Oregon Permissible Exposure Limits (Z-1)	potassium tert-butoxide (Particulates not otherwise regulated (PNOR) (f) Respirable Fraction)	-	5			Bold print identifies substances for which the Oregon Permissible Exposure Limits (PELs) are different than the federal Limits. PNOR means “particles not otherwise regulated.”

US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	potassium tert-butoxide (Particulates not otherwise regulated (PNOR)(f)-Respirable fraction)		5				
Canada - Prince Edward Island Occupational Exposure Limits	potassium tert-butoxide (Particles (Insoluble or Poorly Soluble) [NOS] Inhalable particles)		10				See Appendix B current TLV/BEI Book
Canada - Alberta Occupational Exposure Limits	tertiary butanol (tert-Butanol (tert-Butyl alcohol))	100	303				
Canada - British Columbia Occupational Exposure Limits	tertiary butanol (tert-Butanol)	100					
Canada - Ontario Occupational Exposure Limits	tertiary butanol (tert-Butanol / Alcool butylique tertiaire)	100		150			
US ACGIH Threshold Limit Values (TLV)	tertiary butanol (tert-Butanol)	100					TLV Basis: central nervous system impairment
US NIOSH Recommended Exposure Limits (RELs)	tertiary butanol (tert-Butyl alcohol)	100	300	150	450		
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	tertiary butanol (Tert-Butyl alcohol)	100	300	150	450		
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	tertiary butanol (tert-Butyl alcohol.)	100	300				
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	tertiary butanol (tert-Butyl alcohol)	100	300	150	450		
US - Minnesota Permissible Exposure Limits (PELs)	tertiary butanol (tert-Butyl alcohol)	100	300	150	450		
US - California Permissible Exposure Limits for Chemical Contaminants	tertiary butanol (tert-Butyl alcohol)	100	300	150	450		

US - Idaho - Limits for Air Contaminants	tertiary butanol (tert-Butyl alcohol)	100	300			
US OSHA Permissible Exposure Levels (PELs) - Table Z1	tertiary butanol (tert-Butyl alcohol)	100	300			
US - Hawaii Air Contaminant Limits	tertiary butanol (tert-Butyl alcohol)	100	300	150	450	
US - Alaska Limits for Air Contaminants	tertiary butanol (tert-Butyl alcohol)	100	300	150	450	
US - Michigan Exposure Limits for Air Contaminants	tertiary butanol (tert-Butyl aclcohol (tert-butanol))	100	300	150	450	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	tertiary butanol (tert-Butyl alcohol)	100	300	150	450	
US - Washington Permissible exposure limits of air contaminants	tertiary butanol (tert-Butyl alcohol)	100		150		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	tertiary butanol (tert-Butyl alcohol (tert-butanol))	100		125		
Canada - Prince Edward Island Occupational Exposure Limits	tertiary butanol (tert-Butanol)	100				TLV Basis: central nervous system impairment
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	tertiary butanol (tert-Butyl alcohol)	100	300			
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	tertiary butanol (tert-Butyl alcohol)	100	303			
US - Oregon Permissible Exposure Limits (Z-1)	tertiary butanol (tert-Butyl alcohol)	100	300			
Canada - Northwest Territories Occupational Exposure Limits (English)	tertiary butanol (tert-Butyl alcohol)	100	303	150	455	

Canada - Nova Scotia Occupational Exposure Limits	tertiary butanol (tert-Butanol)	100						TLV Basis: central nervous system impairment
Canada - Alberta Occupational Exposure Limits	potassium hydroxide (Potassium hydroxide)					2		
Canada - British Columbia Occupational Exposure Limits	potassium hydroxide (Potassium hydroxide)					2		
US ACGIH Threshold Limit Values (TLV)	potassium hydroxide (Potassium hydroxide)					2		TLV Basis: upper respiratory tract, eye & skin irritation
US NIOSH Recommended Exposure Limits (RELs)	potassium hydroxide (Potassium hydroxide)					2		
US - Minnesota Permissible Exposure Limits (PELs)	potassium hydroxide (Potassium hydroxide)					2		
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	potassium hydroxide (Potassium hydroxide)					2		
US - California Permissible Exposure Limits for Chemical Contaminants	potassium hydroxide (Potassium hydroxide; caustic potash)		2		C			
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	potassium hydroxide (Potassium hydroxide)					2		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	potassium hydroxide (Potassium hydroxide)					2		
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	potassium hydroxide (Potassium hydroxide)					2		
US - Hawaii Air Contaminant Limits	potassium hydroxide (Potassium hydroxide)					2		
Canada - Yukon Permissible Concentrations for Airborne Contaminant	potassium hydroxide (Potassium hydroxide)	-	2	-	-			

Substances			
US - Washington Permissible exposure limits of air contaminants	potassium hydroxide (Potassium hydroxide)	2	
US - Alaska Limits for Air Contaminants	potassium hydroxide (Potassium hydroxide)	2	
Canada - Nova Scotia Occupational Exposure Limits	potassium hydroxide (Potassium hydroxide)	2	TLV Basis: upper respiratory tract, eye & skin irritation
Canada - Prince Edward Island Occupational Exposure Limits	potassium hydroxide (Potassium hydroxide)	2	TLV Basis: upper respiratory tract, eye & skin irritation
US - Michigan Exposure Limits for Air Contaminants	potassium hydroxide (Potassium hydroxide)	2	
Canada - Northwest Territories Occupational Exposure Limits (English)	potassium hydroxide (Potassium hydroxide)	2	

ENDOELTABLE

PERSONAL PROTECTION

RESPIRATOR

• type a-p filter of sufficient capacity.

EYE

· Chemical goggles.
· Full face shield.

HANDS/FEET

■ Elbow length PVC gloves.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:
· frequency and duration of contact,
· chemical resistance of glove material,
· glove thickness and
· dexterity
Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).
· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.
· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.
· Contaminated gloves should be replaced.
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

OTHER

■ Wear protective clothing appropriate for the work situation.
For large scale or continuous use, when handling dry powder, wear :
· non-sparking safety footwear,
· tight-weave, non-static, noncombustible or flameproof clothing without cuffs, metallic fasteners, pockets, or laps in which powder may

collect.
· Overalls.
· PVC Apron.

ENGINEERING CONTROLS

· Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
· Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Corrosive.
Alkaline.

State	Divided solid	Molecular Weight	112.22
Melting Range (°F)	493- 496 (decomp)	Viscosity	Not Applicable
Boiling Range (°F)	Not applicable	Solubility in water (g/L)	Reacts
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapor Pressure (mmHg)	0.975 @ 220 C
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	Not available
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	Not Applicable
Volatile Component (%vol)	Negligible	Evaporation Rate	Not applicable

APPEARANCE

White to off-white, hygroscopic powder; reacts with water.

log Kow 0.35-0.37

Material	Value

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Presence of heat source and ignition source.
· May heat spontaneously
· Identify and remove sources of ignition and heating.

STORAGE INCOMPATIBILITY

· Contact with water liberates highly flammable gases.
Segregate from alcohol, water.
Avoid strong acids.
· Avoid contact with copper, aluminium and their alloys.
Avoid reaction with oxidizing agents.
· NOTE: May develop pressure in containers; open carefully. Vent periodically.
Avoid storage with reducing agents.
Avoid chlorinated solvents and oxygen.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

potassium tert-butoxide

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
POTASSIUM HYDROXIDE:
POTASSIUM TERT-BUTOXIDE:
■ Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge

testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.
TERTIARY BUTANOL:

TOXICITY	IRRITATION
Oral (rat) LD50: 3500 mg/kg	Nil Reported
Oral (rat) LD50: 1500 mg/kg (calculated)	

TOXICITY	IRRITATION
POTASSIUM HYDROXIDE:	
Oral (rat) LD50: 273 mg/kg	Skin (human): 50 mg/24h SEVERE
Skin (rabbit): 50 mg/24h SEVERE	
	Eye (rabbit):1mg/24h rinse-Moderate
■ The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.	
The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.	

CARCINOGEN

tertiary butanol	US - Rhode Island Hazardous Substance List	IARC	
VPVB_(VERY~	US - Maine Chemicals of High Concern List	Carcinogen	CA Prop 65; IARC; NTP 11th ROC
potassium hydroxide	US - Rhode Island Hazardous Substance List	IARC	

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
potassium tert-butoxide	No Data Available	No Data Available		
tertiary butanol	HIGH	HIGH	LOW	HIGH
potassium hydroxide	No Data Available	No Data Available	LOW	

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions
A. General Product Information
Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)
Reactivity characteristic: use EPA hazardous waste number D003 (waste code R).

Disposal Instructions
All waste must be handled in accordance with local, state and federal regulations.
¦ Puncture containers to prevent re-use and bury at an authorized landfill.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
· Reduction
· Reuse
· Recycling
· Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
· Recycle wherever possible.
· Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

DOT:
Symbols: G Hazard class or Division: 4.2
Identification Numbers: UN3206 PG: II
Label Codes: 4.2, 8 Special provisions: 64, A7,
IB5, IP2,
T3, TP33
Packaging: Exceptions: None Packaging: Non- bulk: 212
Packaging: Exceptions: None Quantity limitations: 15 kg
Passenger aircraft/rail:
Quantity Limitations: Cargo 50 kg Vessel stowage: Location: B
aircraft only:
Vessel stowage: Other: None
Hazardous materials descriptions and proper shipping names:
Alkali metal alcoholates, self-heating, corrosive, n.o.s.

Air Transport IATA:

ICAO/IATA Class: 4.2 (8) ICAO/IATA Subrisk: None
UN/ID Number: 3206 Packing Group: II
Special provisions: A3
Cargo Only
Packing Instructions: 50 kg Maximum Qty/Pack: 470
Passenger and Cargo Passenger and Cargo
Packing Instructions: 15 kg Maximum Qty/Pack: 466
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: Forbidden Maximum Qty/Pack: Forbidden
■ Air transport may be forbidden if this material is flammable, corrosive or toxic gases may be released under normal conditions of transport.
Shipping Name: ALKALI METAL ALCOHOLATES, SELF-HEATING,
CORROSIVE, N.O.S. *(CONTAINS POTASSIUM TERT-BUTOXIDE)

Maritime Transport IMDG:

IMDG Class: 4.2 IMDG Subrisk: 8
UN Number: 3206 Packing Group: II
EMS Number: F-A , S-J Special provisions: 182 274
Limited Quantities: 0
Shipping Name: ALKALI METAL ALCOHOLATES, SELF-HEATING, CORROSIVE, N.O.S.(contains potassium tert-butoxide)

Section 15 - REGULATORY INFORMATION

potassium tert-butoxide (CAS: 865-47-4) is found on the following regulatory lists;
"Canada Domestic Substances List (DSL)","OECD Representative List of High Production Volume (HPV) Chemicals","US DOE Temporary Emergency Exposure Limits (TEELs)","US Toxic Substances Control Act (TSCA) - Inventory"

Regulations for ingredients

tertiary butanol (CAS: 75-65-0) is found on the following regulatory lists;
"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Ontario Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada National Pollutant Release Inventory (NPRI)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter

17: Summary of minimum requirements","IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances","International Council of Chemical Associations (ICCA) - High Production Volume List","International Fragrance Association (IFRA) Survey: Transparency List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Air Toxics ""Hot Spots"" List (Assembly Bill 2588) Substances for which emissions must be quantified","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - California Toxic Air Contaminant List Category IV","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US Cosmetic Ingredient Review (CIR) Cosmetic ingredients found safe as used","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPA High Production Volume Program Chemical List","US EPA Master Testing List - Index I Chemicals Listed","US EPCRA Section 313 Chemical List","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels (PELs) - Table Z1","US Spacecraft Maximum Allowable Concentrations (SMACs) for Airborne Contaminants","US Toxic Substances Control Act (TSCA) - Inventory","US TSCA Section 8 (a) - Preliminary Assessment Information Rules (PAIR) - Reporting List","US TSCA Section 8 (d) - Health and Safety Data Reporting"

potassium hydroxide (CAS: 1310-58-3) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Industrial Hazardous Substances","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","Canada Domestic Substances List (DSL)","Canada Ingredient Disclosure List (SOR/88-64)","Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS (English)","CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food in General, Unless Otherwise Specified, in Accordance with GMP","GESAMP/EHS Composite List - GESAMP Hazard Profiles","IMO IBC Code Chapter 17: Summary of minimum requirements","International Council of Chemical Associations (ICCA) - High Production Volume List","OECD Representative List of High Production Volume (HPV) Chemicals","US - Alaska Limits for Air Contaminants","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - Connecticut Hazardous Air Pollutants","US - Hawaii Air Contaminant Limits","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Permissible exposure limits of air contaminants","US ACGIH Threshold Limit Values (TLV)","US CWA (Clean Water Act) - List of Hazardous Substances","US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US DOE Temporary Emergency Exposure Limits (TEELs)","US EPA High Production Volume Chemicals Additional List","US FDA Indirect Food Additives: Adhesives and Components of Coatings - Substances for Use as Components of Coatings - Acrylate ester copolymer coating","US Food Additive Database","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)","US Postal Service (USPS) Hazardous Materials Table: Postal Service Mailability Guide","US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 - OTHER INFORMATION

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.