

Phosphoric acid

sc-215713



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Phosphoric acid

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

H3-P-04, "orthophosphoric acid"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	0	
Toxicity:	3	
Body Contact:	3	
Reactivity:	1	
Chronic:	2	

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



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Harmful if swallowed.

Causes burns.

Risk of serious damage to eyes.

May cause long-term adverse effects in the environment.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ 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.

■ The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.

■ Ingestion of acidic corrosives may produce burns around and in the mouth, the throat and esophagus.

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EYE

■ The material can produce 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 acid corrosives may produce pain, tears, sensitivity to light and burns. Mild burns of the epithelia generally recover rapidly and completely.

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SKIN

■ The material can produce chemical burns following direct contact with the skin.

■ The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering.

■ 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.

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■ 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.

■ Skin contact with acidic corrosives may result in pain and burns; these may be deep with distinct edges and may heal slowly with the formation of scar tissue.

INHALED

■ If inhaled, this material can irritate the throat and lungs of some persons.

■ Not normally a hazard due to non-volatile nature of product.

■ High concentrations cause inflamed airways and watery swelling of the lungs with edema.

■ Corrosive acids can cause irritation of the respiratory tract, with coughing, choking and mucous membrane damage. There may be dizziness, headache, nausea and weakness.

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■ Inhalation of dusts, generated by the material during the course of normal handling, may produce serious damage to the health of the individual.

CHRONIC HEALTH EFFECTS

■ Repeated or prolonged exposure to acids may result in the erosion of teeth, swelling and or ulceration of mouth lining. Irritation of airways to lung, with cough, and inflammation of lung tissue often occurs.

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Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Sodium phosphate dibasic can cause stones in the kidney, loss of mineral from the bones and loss of thyroid gland function.

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.

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The product does not cause phosphorus poisoning.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
phosphoric acid	7664-38-2	>98

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.

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.

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ For acute or short term repeated exposures to strong acids:
· Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
· Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg):	5.625 75% @20C
Upper Explosive Limit (%):	Not applicable
Specific Gravity (water=1):	1.58@75% 1.65-1.8
Lower Explosive Limit (%):	Not applicable

EXTINGUISHING MEDIA

· Water spray or fog.
· Foam.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.
· Wear full body protective clothing with breathing apparatus.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Non combustible.
· Not considered to be a significant fire risk.
Decomposition may produce toxic fumes of: phosphorus oxides (POx).

FIRE INCOMPATIBILITY

■ None known.

PERSONAL PROTECTION

Glasses:
Chemical goggles.
Full face- shield.
Gloves:
1.NAT+NEOPR+NITRILE 2.NITRILE
Respirator:
Type B-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

■ Environmental hazard - contain spillage.
· Clean up all spills immediately.
· Avoid breathing vapors and contact with skin and eyes.

MAJOR SPILLS

■ Environmental hazard - contain spillage.
· 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

· DO NOT allow clothing wet with material to stay in contact with skin.
· Avoid all personal contact, including inhalation.
· Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS

■ DO NOT use aluminum or galvanized containers.
Glass container.
· Lined metal can, Lined metal pail/drum
· Plastic pail.

STORAGE REQUIREMENTS

· Store in original containers.

· Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	phosphoric acid, solid (Phosphoric acid)		1		3				
Canada - British Columbia Occupational Exposure Limits	phosphoric acid, solid (Phosphoric acid)		1		3				
US - Minnesota Permissible Exposure Limits (PELs)	phosphoric acid, solid (Phosphoric acid)		1		3				
US OSHA Permissible Exposure Levels (PELs) - Table Z1	phosphoric acid, solid (Phosphoric acid)		1						
US ACGIH Threshold Limit Values (TLV)	phosphoric acid, solid (Phosphoric acid)		1		3				TLV Basis: upper respiratory tract, eye & skin irritation
US NIOSH Recommended Exposure Limits (RELs)	phosphoric acid, solid (Phosphoric acid)		1		3				
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	phosphoric acid, solid (Phosphoric acid)		1		3				
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	phosphoric acid, solid (Phosphoric acid)		1						
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	phosphoric acid, solid (Phosphoric acid)		1		3				
US - California Permissible Exposure Limits for Chemical Contaminants	phosphoric acid, solid (Phosphoric acid)		1		3				
US - Idaho - Limits for Air Contaminants	phosphoric acid, solid (Phosphoric acid)		1						
US - Hawaii Air Contaminant Limits	phosphoric acid, solid (Phosphoric acid)		1		3				

US - Alaska Limits for Air Contaminants	phosphoric acid, solid (Phosphoric acid)	1	3	
US - Michigan Exposure Limits for Air Contaminants	phosphoric acid, solid (Phosphoric acid)	1	3	
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	phosphoric acid, solid (Phosphoric acid)	1	3	
US - Washington Permissible exposure limits of air contaminants	phosphoric acid, solid (Phosphoric acid)	1	3	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	phosphoric acid, solid (Phosphoric acid)	1	3	
Canada - Prince Edward Island Occupational Exposure Limits	phosphoric acid, solid (Phosphoric acid)	1	3	TLV Basis: upper respiratory tract, eye & skin irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	phosphoric acid, solid (Phosphoric acid)	1		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	phosphoric acid, solid (Phosphoric acid)	1	3	
US - Oregon Permissible Exposure Limits (Z-1)	phosphoric acid, solid (Phosphoric acid)	1		
Canada - Northwest Territories Occupational Exposure Limits (English)	phosphoric acid, solid (Phosphoric acid)	1	3	
Canada - Nova Scotia Occupational Exposure Limits	phosphoric acid, solid (Phosphoric acid)	1	3	TLV Basis: upper respiratory tract, eye & skin irritation

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

Type B-P Filter of sufficient capacity
Consult your EHS staff for recommendations

EYE

- Chemical goggles.
- Full face shield.

HANDS/FEET

- 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.

Wear chemical protective gloves, eg. PVC.

· When handling corrosive liquids, wear trousers or overalls outside of boots, to avoid spills entering boots.

ENGINEERING CONTROLS

- General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Mixes with water.

Corrosive.

Acid.

Toxic or noxious vapours/gas.

State	Divided Solid	Molecular Weight	98.00 (100%).
Melting Range (°F)	69.8(85%)-17.5 75%	Viscosity	Not Available
Boiling Range (°F)	309.2(85%)135(75%)	Solubility in water (g/L)	Miscible
Flash Point (°F)	Not available	pH (1% solution)	2.12 Step 1 0.1N
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not available
Autoignition Temp (°F)	Not applicable	Vapor Pressure (mmHg)	5.625 75% @20C
Upper Explosive Limit (%)	Not applicable	Specific Gravity (water=1)	1.58@75%1.65-1.8
Lower Explosive Limit (%)	Not applicable	Relative Vapor Density (air=1)	Not available.
Volatile Component (%vol)	15-25 (water)	Evaporation Rate	Very Slow

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Contact with alkaline material liberates heat.
- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

· Reacts vigorously with alkalis.

Reacts with mild steel, galvanized steel / zinc producing hydrogen gas which may form an explosive mixture with air.

· Avoid strong bases.

· Inorganic acids are generally soluble in water with the release of hydrogen ions. The resulting solutions have pH's of less than 7.0.

· Inorganic acids neutralize chemical bases (for example: amines and inorganic hydroxides) to form salts.

· Phosphates are incompatible with oxidizing and reducing agents.

· Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides.

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

Section 11 - TOXICOLOGICAL INFORMATION

PHOSPHORIC ACID, SOLID

TOXICITY AND IRRITATION

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
- 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.
- 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.
- The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

PHOSPHORIC ACID, SOLID:

TOXICITY	IRRITATION
Unreported (human) LDLo: 220 mg/kg Skin (rabbit):595 mg/24h - SEVERE	
Oral (rat) LD50: 1530 mg/kg Eye (rabbit): 119 mg - SEVERE	
Oral (rat) LD50: 3500 mg/kg* [Monsanto]*	
Dermal (rabbit) LD50: >1260 mg/kg*	
phosphoric acid (85%)	
TOXICITY	IRRITATION
PHOSPHORIC ACID:	
Unreported (human) LDLo: 220 mg/kg	Skin (rabbit):595 mg/24h - SEVERE
Oral (rat) LD50: 1530 mg/kg	Eye (rabbit): 119 mg - SEVERE
Oral (rat) LD50: 3500 mg/kg*	[Monsanto]*
Dermal (rabbit) LD50: 1260 mg/kg*	
Inhalation (Rat) LC50: 25.5 mg/m ³ /4h	
Inhalation (Mouse) LC50: 25.5 mg/m ³ /4h	
phosphoric acid (85%)	

Section 12 - ECOLOGICAL INFORMATION

May cause long-term adverse effects in the environment.
 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 This material and its container must be disposed of as hazardous waste.
 Avoid release to the environment.
 Refer to special instructions/ safety data sheets.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
phosphoric acid, solid	HIGH		LOW	HIGH
phosphoric acid	HIGH		LOW	HIGH

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____
 _____ Phosphori 113 567 0 NI 0 Ino 1 NI (3) (3) 3 3 3 D 3 c acid / 8 rg CAS:7664- 38- 2 / TB6300000

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships)
 NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation,
 B1=Acuteaquatic toxicity LC/ECIC50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg),
 C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion,

D2=Eye irritation& corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen, M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lunginjury, N=Neurotoxic, I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions

A. General Product Information

Corrosivity characteristic: use EPA hazardous waste number D002 (waste code C)

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

· 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.

Puncture containers to prevent re-use and bury at an authorized landfill.

Section 14 - TRANSPORTATION INFORMATION



DOT:

Symbols: None Hazard class or Division: 8

Identification Numbers: UN3453 PG: III

Label Codes: 8 Special provisions: IB8, IP3,

T1, TP33

Packaging: Exceptions: 154 Packaging: Non- bulk: 213

Packaging: Exceptions: 154 Quantity limitations: 25 kg

Passenger aircraft/rail:

Quantity Limitations: Cargo 100 kg Vessel stowage: Location: A aircraft only:

Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:

Phosphoric acid, solid

Air Transport IATA:

ICAO/IATA Class: 8 ICAO/IATA Subrisk: None

UN/ID Number: 3453 Packing Group: III

Special provisions: None

Cargo Only

Packing Instructions: 826 Maximum Qty/Pack: 100 kg

Passenger and Cargo Passenger and Cargo

Packing Instructions: 825 Maximum Qty/Pack: 25 kg

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: Y825 Maximum Qty/Pack: 5 kg

Shipping Name: PHOSPHORIC ACID, SOLID

Maritime Transport IMDG:

IMDG Class: 8 IMDG Subrisk: None

UN Number: 3453 Packing Group: III

EMS Number: F-A, S-B Special provisions: None

Limited Quantities: 5 kg Marine Pollutant: Yes

Shipping Name: PHOSPHORIC ACID, SOLID

Section 15 - REGULATORY INFORMATION

phosphoric acid, solid (CAS: 7664-38-2) 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)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum

requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "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 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 OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - California Toxic Air Contaminant List Category II", "US - Connecticut Hazardous Air Pollutants", "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 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 Direct Food Substances Generally Recognized as Safe", "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 OSHA Permissible Exposure Levels (PELs) - Table Z1", "US Toxic Substances Control Act (TSCA) - Inventory"

Regulations for ingredients

phosphoric acid (CAS: 7664-38-2, 16271-20-8) 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)", "GESAMP/EHS Composite List - GESAMP Hazard Profiles", "IMO IBC Code Chapter 17: Summary of minimum requirements", "IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk", "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 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 OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs)", "US - California Permissible Exposure Limits for Chemical Contaminants", "US - California Toxic Air Contaminant List Category II", "US - Connecticut Hazardous Air Pollutants", "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 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 Direct Food Substances Generally Recognized as Safe", "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 OSHA Permissible Exposure Levels (PELs) - Table Z1", "US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 - OTHER INFORMATION

Ingredients with multiple CAS Nos

Ingredient Name CAS phosphoric acid 7664-38-2, 16271-20-8

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.

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