

**Medical Conditions
Generally Aggravated
By Exposure:**

Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

III. Composition/Information on Ingredients

United States

Name	CAS Number	%
Diphosphoric acid, tetrapotassium salt	7320-34-5	10-30
Sodium nitrite	7632-00-0	10-15
Sodium nitrate	7631-99-4	5-10
Disodium molybdate	7631-95-0	5-10
Disodium metasilicate	6834-92-0	5-10
Tolyltriazole	29385-43-1	5-10
Sodium tetraborate	1330-43-4	1-5

Canada

Name	CAS Number	%
Diphosphoric acid, tetrapotassium salt	7320-34-5	10-30
Sodium nitrite	7632-00-0	10-15
Sodium nitrate	7631-99-4	5-10
Disodium molybdate	7631-95-0	5-10
Disodium metasilicate	6834-92-0	5-10
Sodium tetraborate	1330-43-4	1-5
2,5-Furandione	108-31-6	0.1-1

Mexico

Name	UN Number	IDLH	Classification			Special	CAS Number	%
			H	F	R			
Diphosphoric acid, tetrapotassium salt	Not regulated	-	1	0	0		7320-34-5	10-30
Sodium nitrite	UN1500	-	2	0	2	OX	7632-00-0	10-15
Sodium nitrate	UN1498	-	1	0	1	OX	7631-99-4	5-10
Disodium metasilicate	UN3253	-	3	0	0		6834-92-0	5-10
Disodium molybdate	Not regulated	1000 mg/m ³	0	1	0		7631-95-0	5-10
Sodium tetraborate	Not regulated	-	0	0	0		1330-43-4	1-5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

IV. First Aid Measures

- Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
- Skin Contact:** In case of contact immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
- Ingestion:** Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
- Inhalation:** Move exposed person to fresh air. If not breathing, or if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing, such as a collar, tie, belt, or waistband. Get medical attention immediately.

**Protection of
First-Aiders:**

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to Physician:

In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

V. Fire-Fighting Measures

**Flammability of
the Product:**

Not flammable.

**Extinguishing Media
Suitable:
Not Suitable:**

Use dry chemical, CO₂, water spray (fog), or foam.
None known.

**Special Exposure
Hazards:**

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Hazardous Thermal
Decomposition Products:**

Decomposition products may include the following materials: Oxides of carbon, oxides of nitrogen, toxic fumes.

**Special Protective
Equipment for
Fire-Fighters:**

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

VI. Accidental Release Measures

Personal Precautions:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental Precautions:

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil, or air).

**Methods for Cleaning Up
Small Spill:**

Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large Spill:

Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements, or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and section 13 for waste disposal.

VI. Handling and Storage

Handling:

Put on appropriate personal protective equipment (see Section 8). Eating, drinking, and smoking should be prohibited in areas where this material is handled, stored, and processed. Workers should wash hands and face before eating, drinking, and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool, and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep containers closed when not in use. Keep dry. Do not store at elevated temperatures nor near oxidizers. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

VIII. Exposure Controls/Personal Protection

United States

Ingredient

Exposure Limits

Diphosphoric acid, tetrapotassium salt

ACGIH TLV (United States)

TWA: 5 mg/m³ 8 hour(s). Form: Dust

Sodium nitrate

ACGIH TLV (United States)

TWA: 10 mg/m³ 8 hour(s). Form: Dust

Disodium molybdate

OSHA PEL 1989 (United States 3/1989)

TWA: 5 mg/m³ (as Mo) 8 hour(s)

OSHA PEL (United States, 11/2006)

TWA: 5 mg/m³ (as Mo) 8 hour(s)

ACGIH TLV (United States, 1/2008)

TWA: 0.5 mg/m³ (as Mo) 8 hour(s). Form: Soluble

Sodium tetraborate

ACGIH TLV (United States, 1/2008)

STEL: 6 mg/m³ 15 minute(s)

TWA: 2 mg/m³ 8 hour(s)

NIOSH REL (United States, 6/2008)

TWA: 1 mg/m³ 10 hour(s)

OSHA PEL 1989 (United States, 3/1989)

TWA: 10 mg/m³ 8 hour(s)

Canada

Occupational Exposure Limits		TWA (8 hours)			STEL (15 mins)			Ceiling			Notations
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other	
Diphosphoric acid, tetrapotassium salt	US ACGIH	-	5	-	-	-	-	-	-	-	[a]
Sodium nitrate		-	10	-	-	-	-	-	-	-	[a]
Disodium molybdate, as Mo	US ACGIH 1/2008	-	0.5	-	-	-	-	-	-	-	[b]
	AB 6/2008	-	5	-	-	-	-	-	-	-	
	BC 6/2008	-	0.5	-	-	-	-	-	-	-	[c]
Disodium molybdate, Mo	ON 6/2008	-	0.5	-	-	-	-	-	-	-	[d]
	QC 6/2008	-	5	-	-	-	-	-	-	-	
Sodium tetraborate	US ACGIH 1/2008	-	2	-	-	6	-	-	-	-	
	ON 6/2008	-	2	-	-	6	-	-	-	-	
	QC 6/2008	-	1	-	-	-	-	-	-	-	
2,5-Furandione	US ACGIH 1/2008	0.1	-	-	-	-	-	-	-	-	[3]
	AB 6/2008	0.25	1	-	-	-	-	-	-	-	
	BC 6/2008	0.1	-	-	-	-	-	-	-	-	[3]
	ON 6/2008	0.1	-	-	-	-	-	-	-	-	
	QC 6/2008	0.25	1	-	-	-	-	-	-	-	

[3]Skin sensitization

Form: [a]Dust [b]Soluble [c]Respirable [d]The notation "respirable" following the name of an agent in this Schedule means that size fraction of the airborne particulate deposited in the gas-exchange region of the respiratory tract and collected during air sampling with a particle size-selective device that, (a) meets the American Conference of Governmental Industrial Hygienists (ACGIH) particle size-selective criteria; and (b) has the cut point of 4 microns at 50 percent collective efficiency. [e]Inhalable

Mexico

Ingredient	Exposure limits
Diphosphoric acid, tetrapotassium salt	ACGIH TLV (United States) TWA: 5 mg/m ³ 8 hour(s). Form: Dust
Sodium nitrate	ACGIH TLV (United States) TWA: 10 mg/m ³ 8 hour(s). Form: Dust
Disodium molybdate	NOM-010-STPS (Mexico, 9/2000) LMPE-CT: 10 mg/m ³ , (as Mo) 15 minute(s) LMPE-PPT: 5 mg/m ³ , (as Mo) 8 hour(s)
Sodium Tetraborate	NOM-010-STPS (Mexico, 9/2000) LMPE-PPT: 1 mg/m ³ 8 hour(s)

Consult local authorities for acceptable exposure limits.

Recommended Monitoring

Procedures:

If this produce contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering Controls:

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor, or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene:

Wash hands, forearms, and face thoroughly after handling chemical products, before eating, smoking, and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protection

Eyes:

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, or dusts.

Skin:

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory:

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the produce, and the safe working limits of the selected respirator.

Hands:

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. > 8 hours (breakthrough time)

Environmental exposure

Controls:

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

IX. Physical and Chemical Properties

Physical State:

Solid [Pellet].

Color:

White.

Odor:

Mild. Ester.

Solubility:

Easily soluble in the following materials: cold water and hot water.

IX. Stability and Reactivity

Stability and Reactivity:	Stable.
Conditions to Avoid:	Extreme heat.
Materials to Avoid:	Reactive or incompatible with the following materials: oxidizing materials, reducing materials, organic materials, metals, acids, and moisture.
Hazardous Decomposition Products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous Polymerization:	Under normal conditions of storage and use, hazardous reactions will not occur.

XI. Toxicological Information

Acute Toxicity

Ingredient Name	Species	Dose	Result	Exposure
Diphosphoric acid, tetrapotassium salt	Rabbit	>4640 mg/kg	LD50 Dermal	-
Sodium nitrate	Rat	1267 mg/kg	LD50 Oral	-
Disodium molybdate	Rat	4 g/kg	LD50 Oral	-
	Rat	>2080 mg/m ³	LC50 Inhalation Vapor	4 hours
Disodium metasilicate	Rat	1153 mg/kg	LD50 Oral	-
Tolyltriazole	Rat	675 mg/kg	LD50 Oral	-
Sodium tetraborate	Rat	1200 mg/kg	LD50 Oral	-

Inhalation:	May be harmful if inhaled.
Ingestion:	May be harmful if swallowed.
Skin:	Slightly irritating to the skin.
Eyes:	Irritating to eyes.

Chronic Toxicity

Carcinogenicity Classification

Ingredient Name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Sodium nitrite	-	2A	-	-	-	-
Sodium nitrate	-	2A	-	-	-	-
Sodium tetraborate	4A	-	-	-	-	-

XII. Ecological Information

Aquatic Toxicity

Ingredient Name	Species	Exposure	Result
Sodium nitrite	Fish	96 hours	Acute LC50 0.54 mg/L
Sodium nitrate	Fish	96 hours	Acute LC50 1658 to 2063 mg/L
Sodium molybdate	Fish	96 hours	Acute LC50 800000 µg/L
Sodium tetraborate	Fish	96 hours	Acute LC50 104000 µg/L

XIII. Disposal Considerations

Waste Disposal Method:	The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions, and any by-products should, at all times, comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains, and sewers.
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Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

XIV. Transport Information

Refer to Bill of Lading or container label for DOT or other transportation hazard classification, if any.

XV. Regulatory Information

United States

HCS Classification: Toxic material
Irritating material

U.S. Federal Regulations:

TSCA 4(a) final test rules: Ethane, 1,2-dichloro-
TSCA 5(a) final significant rules: Sodium nitrite
TSCA 6 proposed risk management: Lead alloyed
TSCA 8(a) PAIR: Siloxanes and Silicones, di-Me; Ethane, 1,2-dichloro-
United States Inventory (TSCA 8b): Not determined
TSCA 8(d) H and S data reporting: Sodium nitrite: 1991; Siloxanes and Silicones, di-Me: 1993, Lead alloyed: 2008.
SARA 302/304/311/312 Extremely Hazardous Substances: No products were found.
SARA 302/304 Emergency Planning and Notification: No products were found.
SARA 302/304/311/312 Hazardous Chemicals: Sodium nitrite; Sodium nitrate, Sodium molybdate, Sodium metasilicate, Sodium tetraborate
SARA 311/312 MSDS Distribution – Chemical Inventory – Hazard Identification:
Sodium nitrite: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard; Sodium nitrate: Fire hazard, Delayed (chronic) health hazard; Sodium molybdate: Immediate (acute) health hazard, Delayed (chronic) health hazard; Sodium metasilicate: Immediate (acute) health hazard, Delayed (chronic) health hazard; Sodium tetraborate: Immediate (acute) health hazard.
Clean Water Act (CWA) 307: Lead alloyed; Mercury; Ethane, 1,2-dichloro-
Clean Water Act (CWA) 311: Sodium Nitrite
Clean Air Act (CAA) 112 Accidental Release Prevention: Ethylene oxide
Clean Air Act (CAA) 112 Regulated Flammable Substances: No products were found.
Clean Air Act (CAA) 112 Regulated Toxic Substances: Ethylene oxide

**Clean Air Act Section 112(b)
Hazardous Air
Pollutants (HAPs):**

Not listed

**Clean Air Act Section 602
Class I Substances:**

Not listed

**Clean Air Act Section 602
Class II Substances:**

Not listed

**DEA List I Chemicals
(Precursor Chemicals):**

Not listed

**DEA List I Chemicals
(Essential Chemicals):**

Not listed

SARA 313
Form R – Reporting Requirements Supplier Notification

Product Name	CAS Number	Concentration
Sodium nitrite	7632-00-0	10 – 15
Sodium nitrate	7631-99-4	5 – 10
Sodium nitrite	7632-00-0	10 – 15
Sodium nitrate	7631-99-4	5 – 10

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State Regulations:

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida Substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: Sodium nitrite; Sodium nitrate; Sodium tetraborate.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: Sodium nitrite; Sodium nitrate
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: The following components are listed: Sodium nitrite
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: The following components are listed: Sodium nitrite; Sodium nitrate; Sodium tetraborate
Rhode Island Hazardous Substances: None of the components are listed.

California Prop 65:

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause cancer.

Ingredient Name	Cancer	Reproductive	No Significant Risk Level	Maximum Acceptable Dosage Level
Ethylene Oxide	Yes	Yes	Yes	Yes
Lead alloyed	Yes	Yes	15 µg/day (ingestion)	Yes
Mercury	No	Yes	No	No
Ethane, 1,2-dichloro-	Yes	No	Yes	No

Canada
WHMIS (Canada):

Class D-2B: Material causing other toxic effects (Toxic).



Canadian List:

CEPA Toxic Substances: None of the components are listed.

Canadian ARET: None of the components are listed.

Canadian NPRI: The following components are listed: Phosphorus (total); Sodium nitrite; Sodium nitrate

Alberta Designated Substances: None of the components are listed.

Ontario Designated Substances: None of the components are listed.

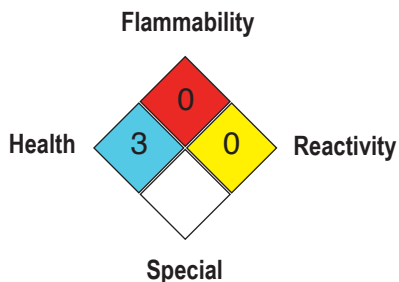
Quebec Designated Substances: None of the components are listed.

Canada Inventory:

All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Mexico Classification:



International Regulations

International Lists:

Australia Inventory (AICS): All components are listed or exempted.

China Inventory (IECSC): All components are listed or exempted.

Japan Inventory: Not determined.

Korea Inventory: All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIoC): Not determined.

Philippines Inventory (PICCS): All components are listed or exempted.

Chemical Weapons Convention List

Schedule I Chemicals: Not listed

Chemical Weapons Convention List

Schedule II Chemicals: Not listed

Chemical Weapons Convention List

Schedule III Chemicals: Not listed

XVI. Other Information

Label Requirements:

MAY BE HARMFUL IF SWALLOWED. CAUSES EYE IRRITATION. MAY CAUSE RESPIRATORY TRACT AND SKIN IRRITATION.

Hazardous Material Information System (U.S.A.):

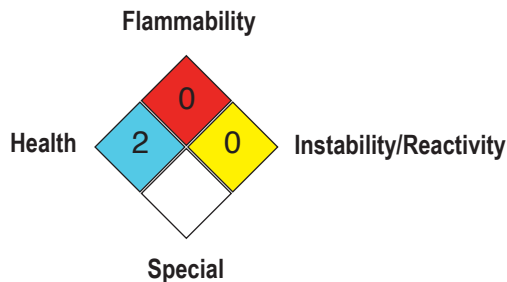
Health	2
Fire Hazard	0
Reactivity	0
Personal Protection	C

Hazard Ratings

- 4 = Extreme
- 3 = Serious
- 2 = Moderate
- 1 = Slight
- 0 = Minimal

See section 8 for more detailed information on personal protection

National Fire Protection
Association (U.S.A.):



References: Available on request.

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