



Safety Data Sheet

Cat. # 786-450

PhosphataseArrest™ I [100X]

Size: 1ml





PhosphataseArrest™ I [100X]

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 09/17/2014

Revision date: 05/11/2017

Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : PhosphataseArrest™ I [100X]
Product code : 113P

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
Saint Louis, 63132-1429 - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Not classified

2.2. GHS Label elements, including precautionary statements

GHS US labeling

No labeling applicable

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
Sodium Pyrophosphate dibasic	acid sodiumpyrophosphate / ASPP (=acid sodiumpyrophosphate) / diphosphoric acid, disodium salt / disodium acid pyrophosphate / disodium dihydrogendiphosphate / disodium dihydrogenpyrophosphate / disodium diphosphate / disodium pyrophosphate / E450(a) food grade / pyrophosphoric acid disodium salt / SAPP (=sodium acid pyrophosphate) / sodium acid pyrophosphate / sodium dihydrogen pyrophosphate / sodium pyrophosphate (=disodium pyrophosphate) / sodium pyrophosphate, acid	(CAS-No.) 7758-16-9	2 - 5	Eye Irrit. 2, H319
sodium molybdate, dihydrate	disodium molybdate, dihydrate / molybdic acid, disodium salt, dihydrate / molyhibit 100 / sodium molybdate(VI) dihydrate / sodium molybdate-2-hydrate	(CAS-No.) 10102-40-6	2 - 5	Not classified

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Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
sodium fluoride	alcoa sodium fluoride / antibulit / caribium / cavi-trol / chemifluor / credo / disodium difluoride / duraphat / F1-tabs / FDA 0101 / floridine / florocid / flozenges / fluoral / fluoride of sodium / fluorident / fluoridine / fluorigard / fluorineed / fluorinse / fluoritab / fluorocid / fluor-O-kote / fluoral / fluoros / flura / flura drops / flura-gel / flura-loz / flurcare / flursol / fungol B / GEL II / geluton / gleem / iradicav / karidium / karigel / karinse / lea-cov / lemoflur / luride / luride lozi-tabs / luride-SF / Na frinse / nafeen / nafpak / nat. villiamite / Natriumfluorid / nufleur / ossalin / ossin / osteofluor / pediaflor / pedident / pennwhite / pergantene / phos-flur / point two / predent / raflur / rescue squad / Roach salt / sodium fluoride / sodium fluoride (NaF) / sodium fluoride cyclic dimer / sodium fluoride, solid / sodium hydrofluoride / sodium monofluoride / SO-Flo / stay-flo / studaflur / super-dent / T-fluoride / thera-flur / thera-flur-N / trisodium trifluoride / villiamite (=sodium fluoride) / villiamite (=sodium fluoride), natural / williamite (=sodium fluoride) / zymaflur	(CAS-No.) 7681-49-4	2 - 5	Acute Tox. 3 (Oral), H301 Skin Irrit. 2, H315 Eye Irrit. 2, H319
Sodium Orthovanadate	trisodium tetraoxovanadate / vanadate (VO ₄ ,3-), trisodium, (T-4)- / vanadic acid (H ₃ VO ₄), trisodium salt / vanadic(II)acid trisodium salt	(CAS-No.) 13721-39-6	0.5 - 2	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspersion pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
- First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.
- First-aid measures after skin contact : Rinse with water. Do not apply (chemical) neutralizing agents without medical advice. Soap may be used. Take victim to a doctor if irritation persists.
- First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply (chemical) neutralizing agents without medical advice. Take victim to an ophthalmologist if irritation persists.
- First-aid measures after ingestion : Rinse mouth with water. Do not apply (chemical) neutralizing agents without medical advice. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects (acute and delayed)

- Symptoms/effects after inhalation : AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
- Symptoms/effects after skin contact : Slight irritation.
- Symptoms/effects after eye contact : Irritation of the eye tissue.
- Symptoms/effects after ingestion : Gastrointestinal complaints. Nausea. Vomiting. Diarrhoea. AFTER INGESTION OF HIGH QUANTITIES: Slowing heart action. Low arterial pressure. Blue/grey discolouration of the skin.
- Chronic symptoms : Skin rash/inflammation.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam.

5.2. Specific hazards arising from the chemical

Fire hazard : DIRECT FIRE HAZARD: Non combustible.

Explosion hazard : DIRECT EXPLOSION HAZARD: No direct explosion hazard.

5.3. Special protective equipment and precautions for fire-fighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions : Dilute toxic gases with water spray. Take account of toxic/corrosive precipitation water.

Protection during firefighting : Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.

Emergency procedures : Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray.

Methods for cleaning up : Stop dust cloud by humidifying. Scoop solid spill into closing containers. Wash down leftovers with plenty of water. Wash clothing and equipment after handling.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid raising dust. Keep away from naked flames/heat. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Comply with the legal requirements. Clean contaminated clothing. Keep container tightly closed.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Storage temperature : 4 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

sodium molybdate, dihydrate (10102-40-6)

USA - ACGIH - Occupational Exposure Limits

ACGIH TWA (mg/m ³)	0.5 mg/m ³ (Respirable fraction)
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sodium fluoride (7681-49-4)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m³)	2.5 mg/m³
Sodium Orthovanadate (13721-39-6)	
No additional information available	
Sodium Pyrophosphate dibasic (7758-16-9)	
No additional information available	

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Protective gloves against chemicals (EN374)

Eye protection:

Safety glasses. In case of dust production: protective goggles

Skin and body protection:

Protective clothing

Respiratory protection:

Dust production: dust mask with filter type P1

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Clear
Odor	: No data available
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

No additional information available

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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

sodium molybdate, dihydrate (10102-40-6)	
LD50 oral rat	4233 mg/kg (Rat, Oral)
LD50 dermal rat	> 2000 mg/kg (Rat, Dermal)

sodium fluoride (7681-49-4)	
LD50 oral rat	52 mg/kg (Rat, Oral)
ATE US (oral)	100 mg/kg body weight

Sodium Orthovanadate (13721-39-6)	
LD50 oral rat	330 mg/kg (Rat, Oral)
ATE US (oral)	500 mg/kg body weight
ATE US (dermal)	1100 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h

Sodium Pyrophosphate dibasic (7758-16-9)	
LD50 oral rat	2440 mg/kg body weight (24 h, Rat, Male / female, Read-across, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	> 0.58 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust))

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

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Viscosity, kinematic	: No data available
Symptoms/effects after inhalation	: AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	: Slight irritation.
Symptoms/effects after eye contact	: Irritation of the eye tissue.
Symptoms/effects after ingestion	: Gastrointestinal complaints. Nausea. Vomiting. Diarrhoea. AFTER INGESTION OF HIGH QUANTITIES: Slowing heart action. Low arterial pressure. Blue/grey discolouration of the skin.
Chronic symptoms	: Skin rash/inflammation.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

sodium molybdate, dihydrate (10102-40-6)	
LC50 fish 1	644.2 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Semi-static system, Fresh water, Experimental value)
EC50 Daphnia 1	130.9 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 (algae)	289.2 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence)

sodium fluoride (7681-49-4)	
LC50 fish 1	> 530 mg/l (96 h, Lepomis macrochirus)
EC50 Daphnia 1	98 mg/l (48 h, Daphnia magna)

Sodium Pyrophosphate dibasic (7758-16-9)	
LC50 fish 1	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, GLP)
EC50 Daphnia 1	> 100 mg/l (EPA OTS 797.1300, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 (algae)	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

sodium molybdate, dihydrate (10102-40-6)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

sodium fluoride (7681-49-4)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

Sodium Orthovanadate (13721-39-6)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

Sodium Pyrophosphate dibasic (7758-16-9)	
Persistence and degradability	Biodegradability in water: no data available.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

sodium molybdate, dihydrate (10102-40-6)	
BCF fish 1	4.9 (28 day(s), Oncorhynchus tshawytscha, Fresh water, Weight of evidence, Anhydrous form)

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sodium molybdate, dihydrate (10102-40-6)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
sodium fluoride (7681-49-4)	
BCF fish 1	2.3 (Salmo gairdneri)
Bioaccumulative potential	Not bioaccumulative.
Sodium Orthovanadate (13721-39-6)	
Bioaccumulative potential	No bioaccumulation data available.
Sodium Pyrophosphate dibasic (7758-16-9)	
Log Pow	-2
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

sodium molybdate, dihydrate (10102-40-6)	
Ecology - soil	No (test)data on mobility of the substance available.
sodium fluoride (7681-49-4)	
Ecology - soil	Toxic to flora.
Sodium Orthovanadate (13721-39-6)	
Ecology - soil	No (test)data on mobility of the substance available.
Sodium Pyrophosphate dibasic (7758-16-9)	
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Waste treatment methods.
Product/Packaging disposal recommendations	: Treat using the best available techniques before discharge into drains or the aquatic environment. Contains no organic halogen which may add to the AOX value. 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 if 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 waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Remove to an authorized dump (Class I). Small quantities can be landfilled with the household waste. Precipitate/make insoluble. May be discharged to wastewater treatment installation.
Additional information	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Transport by sea

Not regulated

Air transport

Not regulated

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SECTION 15: Regulatory information

15.1. US Federal regulations

sodium molybdate, dihydrate (10102-40-6)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

sodium fluoride (7681-49-4)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory
Not subject to reporting requirements of the United States SARA Section 313

CERCLA RQ

1000 lb

Sodium Orthovanadate (13721-39-6)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Sodium Pyrophosphate dibasic (7758-16-9)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

EU-Regulations

National regulations

No additional information available

15.3. US State regulations

SECTION 16: Other information

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Full text of H-phrases:

H301	Toxic if swallowed
H302	Harmful if swallowed
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.