

Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

SECTION 1. IDENTIFICATION

Product name : Phosphatase, alkaline (AP), MB Grade (1U/μΙ)

Product code : 10713023001

Manufacturer or supplier's details

Company name of supplier : Roche Diagnostics Deutschland GmbH

Address : 116 Sandhoferstrasse

Mannheim, 68305

Germany

Telephone : +496217590 Telefax : +496217592890

E-mail address : mannheim.umweltschutz@roche.com

Emergency telephone

In case of emergencies: : CHEMTREC +1 703-741-5970 /

1-800-424-9300

Recommended use of the chemical and restrictions on use

Restrictions on use : For professional users only.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

The product is a kit consisting of individual ingredients. The classification of the ingredients can be obtained from section 3. Section GHS Label elements contains the resulting labelling for the kit

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Phosphatase, alkaline

GHS Classification

Not a hazardous substance or mixture.

Components

Chemical name	CAS-No.	Concentration (% w/w)
glycerol	56-81-5	>= 50 - < 70
Alkaline phosphatase	9001-78-9	>= 1 - < 5

Actual concentration is withheld as a trade secret

Alkaline Phosphatase Buffer, 10x conc.



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

GHS Classification

Not a hazardous substance or mixture.

Components

No hazardous ingredients

SECTION 4. FIRST AID MEASURES

General advice : Do not leave the victim unattended.

If inhaled : Move to fresh air.

If unconscious, place in recovery position and seek medical

advice.

If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.

In case of eye contact : Immediately flush eye(s) with plenty of water.

Remove contact lenses. Protect unharmed eye.

If eye irritation persists, consult a specialist.

If swallowed : Keep respiratory tract clear.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician.

Rinse mouth with water.

Most important symptoms and effects, both acute and

delayed

No information available.

Notes to physician : The first aid procedure should be established in consultation

with the doctor responsible for industrial medicine.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Specific hazards during fire

fighting

No information available.

Further information : Standard procedure for chemical fires.

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Special protective equipment :

for fire-fighters

Wear self-contained breathing apparatus for firefighting if

necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Personal precautions, protec: :

tive equipment and emer-

Environmental precautions

gency procedures

Refer to protective measures listed in sections 7 and 8.

Local authorities should be advised if significant spillages

cannot be contained.

Methods and materials for

containment and cleaning up

Wipe up with absorbent material (e.g. cloth, fleece). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against :

fire and explosion

Normal measures for preventive fire protection.

Advice on safe handling : For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the ap-

plication area.

Conditions for safe storage : Electrical installations / working materials must comply with

the technological safety standards.

Further information on stor-

age conditions

See label, package insert or internal guidelines

Materials to avoid : No materials to be especially mentioned.

Further information on stor-

age stability

No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Phosphatase, alkaline

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
glycerol	56-81-5	TWA (mist, respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (mist, total dust)	15 mg/m3	OSHA Z-1
		TWA (Mist - total dust)	10 mg/m3	OSHA P0
		TWA (Mist - respirable fraction)	5 mg/m3	OSHA P0
Alkaline phosphatase	9001-78-9	IOEL	0.00006 mg/m3	Roche In- dustrial Hy- giene Com- mittee (RIHC)



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Alkaline Phosphatase Buffer, 10x conc.

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : No data available

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally requi-

red

Hand protection

In case of contact through splashing:

Material : Nitrile rubber
Break through time : > 30 min
Glove thickness : > 0.11 mm

In case of full contact:

Material : butyl-rubber
Break through time : > 480 min
Glove thickness : > 0.4 mm

Remarks : Wear appropriate protective gloves to prevent skin contact.

Replace torn or punctured gloves promptly.

Eye protection : Safety glasses

Skin and body protection : Protective suit

Hygiene measures : Handle in accordance with good industrial hygiene and safety

practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Phosphatase, alkaline

Appearance : liquid

Color : clear, colorless

Odor : none

Odor Threshold : No data available

pH : 7.6 (39 °F / 4 °C)

(undiluted)

Melting point/range : No data available

Boiling point/boiling range : No data available



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Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Flash point : does not flash

Evaporation rate : No data available

Flammability (liquids) : Does not sustain combustion.

The product is not flammable.

Self-ignition : No data available

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 1.2 g/cm3 (68 °F / 20 °C)

Solubility(ies)

Water solubility : completely miscible

Solubility in other solvents : No data available

Partition coefficient: n-

octanol/water

No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Alkaline Phosphatase Buffer, 10x conc.

Appearance : liquid

Color : clear, colorless

Odor : none



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Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Odor Threshold : No data available

pH : 8.5 (68 °F / 20 °C)

Melting point/range : No data available

Boiling point/boiling range : No data available

Flash point : does not flash

Evaporation rate : No data available

Flammability (liquids) : Does not sustain combustion.

The product is not flammable.

Self-ignition : No data available

Upper explosion limit / Upper

flammability limit

No data available

Lower explosion limit / Lower

flammability limit

No data available

Vapor pressure : No data available

Relative vapor density : No data available

Relative density : No data available

Density : 1.016 g/cm3

Solubility(ies)

Water solubility : completely miscible

Solubility in other solvents : No data available

Partition coefficient: n-

octanol/water

No data available

Autoignition temperature : No data available

Decomposition temperature : No data available

Viscosity

Viscosity, dynamic : No data available

Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.



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1.8 Date of first issue: 09-17-2015

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reac-

tions

No dangerous reaction known under conditions of normal use.

Stable under recommended storage conditions.

No hazards to be specially mentioned.

Conditions to avoid : No data available

Incompatible materials : Strong oxidizing agents

Hazardous decomposition

products

No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Phosphatase, alkaline

Acute toxicity

Not classified based on available information.

Components:

glycerol:

Acute oral toxicity : LD50 Oral (Rat): 12,600 mg/kg

LD50 Oral (Mouse): 4,090 mg/kg

Acute inhalation toxicity : Acute toxicity estimate: > 30 mg/l

Test atmosphere: vapor Method: Expert judgment

Acute dermal toxicity : LD50 (Guinea pig, male and female): 56,750 mg/kg

GLP: no

Alkaline phosphatase:

Acute oral toxicity : Acute toxicity estimate: > 5,001 mg/kg

Method: Expert judgment

Acute inhalation toxicity : Acute toxicity estimate: > 30 mg/l

Test atmosphere: dust/mist Method: Expert judgment

Acute dermal toxicity : Acute toxicity estimate: > 5,001 mg/kg

Method: Expert judgment

Skin corrosion/irritation

Not classified based on available information.



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Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Components:

glycerol:

Species : Rabbit Exposure time : 24 h

Result : No skin irritation

GLP : no

Serious eye damage/eye irritation

Not classified based on available information.

Components:

glycerol:

Species : Rabbit

Result : No eye irritation

Exposure time : 7 d GLP : no

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Components:

glycerol:

Assessment : Mild eye irritant, Mild respiratory irritant, No skin irritation

Germ cell mutagenicity

Not classified based on available information.

Components:

glycerol:

Genotoxicity in vitro : Test Type: Microbial mutagenesis assay (Ames test)

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

GLP: No information available.

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

GLP: No information available.

Carcinogenicity

Not classified based on available information.



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Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Components:

glycerol:

Species : Rat, male and female

Application Route : Oral
Exposure time : 2 Years
Frequency of Treatment : daily

GLP : No information available.

Remarks : No ingredient of this product present at levels greater than or

equal to 0.1% is identified as probable, possible or confirmed

human carcinogen by IARC.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is

identified as probable, possible or confirmed human carcinogen by IARC.

OSHANo component of this product present at levels greater than or equal to 0.1% is

on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is

identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

Components:

glycerol:

Effects on fertility : Test Type: Two-generation study

Species: Rat, male and female

Application Route: Oral Dose: 2000 mg/kg bw/day

Fertility: NOAEL: 2,000 mg/kg body weight

GLP: no

Effects on fetal development : Species: Rabbit, female

Application Route: Oral

Dose: 11.8, 54.8, 254.5, 1180 mg/kg bw/day

Duration of Single Treatment: 29 d

Developmental Toxicity: NOAEL: 1,180 mg/kg bw/day

GLP: no

STOT-single exposure

Not classified based on available information.

Components:

Alkaline phosphatase:

Assessment : The substance or mixture is not classified as specific target

organ toxicant, single exposure.

STOT-repeated exposure

Not classified based on available information.



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1.8 02-07-2021 Date of first issue: 09-17-2015

Components:

Alkaline phosphatase:

Assessment : The substance or mixture is not classified as specific target

organ toxicant, repeated exposure.

Repeated dose toxicity

Components:

glycerol:

Species : Rat, male and female

NOAEL : 4580 mg/kg NOAEL : 4,580 mg/kg

Application Route : Oral Exposure time : 90 d Number of exposures : daily

Dose : 4580 - 25,800 mg/kg/day

GLP : no

Species : Rat, male and female

Application Route : Inhalation
Test atmosphere : dust/mist
Exposure time : 13 Weeks

Number of exposures : 6 hours/day, 5 days/week
Dose : 33, 165 and 660 mg/m3
GLP : No information available.

Species : Rat

NOAEL : 5040 mg/kg
NOAEL : 5,040 mg/kg
Application Route : dermal
Exposure time : 45 Weeks

Number of exposures : 8 hours/day, 5 days/week

Dose : 0.5-4.0 ml/kg

GLP : no

Repeated dose toxicity -

Assessment

Mild eye irritant, Mild respiratory irritant, No skin irritation

Aspiration toxicity

Not classified based on available information.

Components:

Alkaline phosphatase:

No data available

Further information

Components:

Alkaline phosphatase:

Remarks : Health injuries are not known or expected under normal use.



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Alkaline Phosphatase Buffer, 10x conc.

Acute toxicity

Not classified based on available information.

Skin corrosion/irritation

Not classified based on available information.

Serious eye damage/eye irritation

Not classified based on available information.

Respiratory or skin sensitization

Skin sensitization

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Germ cell mutagenicity

Not classified based on available information.

Carcinogenicity

Not classified based on available information.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is

identified as probable, possible or confirmed human carcinogen by IARC.

OSHANo component of this product present at levels greater than or equal to 0.1% is

on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is

identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Not classified based on available information.

STOT-single exposure

Not classified based on available information.

STOT-repeated exposure

Not classified based on available information.

Aspiration toxicity

Not classified based on available information.

SECTION 12. ECOLOGICAL INFORMATION

Phosphatase, alkaline

Ecotoxicity

Components:

glycerol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 54,000 mg/l



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

End point: mortality Exposure time: 96 h Test Type: static test

GLP: no

Toxicity to daphnia and other :

aquatic invertebrates

LC50 (Daphnia magna (Water flea)): 1,955 mg/l

End point: mortality Exposure time: 48 h Test Type: static test Analytical monitoring: no

GLP: no

Toxicity to algae/aquatic

plants

(Scenedesmus quadricauda (Green algae)): > 10,000 mg/l

End point: Growth rate Exposure time: 8 d Test Type: static test

GLP: no

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 10,000 mg/l

End point: Growth rate Exposure time: 16 h Test Type: static test

GLP: No information available.

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to

the environment

No data available

Alkaline phosphatase:

Toxicity to fish : LC50: > 100 mg/l

Exposure time: 96 h

Toxicity to fish (Chronic tox-

icity)

> 1 mg/l

Ecotoxicology Assessment

Acute aquatic toxicity

This product has no known ecotoxicological effects.

Chronic aquatic toxicity

This product has no known ecotoxicological effects.

Toxicity Data on Soil : Not expected to adsorb on soil.



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Date of last issue: 09-19-2019 Version **Revision Date:** 1.8 02-07-2021 Date of first issue: 09-17-2015

Other organisms relevant to : No data available

the environment

Persistence and degradability

Components:

glycerol:

Biodegradability : aerobic

> Inoculum: activated sludge Concentration: 226 mg/l Result: Readily biodegradable.

Biodegradation: 94 % Exposure time: 24 h

GLP: no

Bioaccumulative potential

Components:

glycerol:

Partition coefficient: nlog Pow: -1.75 (77 °F / 25 °C)

octanol/water pH: 7.4

Method: OECD Test Guideline 107

GLP: no

Alkaline phosphatase:

Partition coefficient: n-

octanol/water

: Remarks: No data available

Mobility in soil No data available

Other adverse effects

Alkaline Phosphatase Buffer, 10x conc.

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Can be disposed as waste water, when in compliance with

local regulations.

Contaminated packaging : Empty containers should be taken to an approved waste

handling site for recycling or disposal. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

Domestic regulation

49 CFR

Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

Phosphatase, alkaline

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
7 (7. 010)		(/	(ID3)
Zinc chloride (ZnCl2)	7646-85-7	1000	*

^{*:} Calculated RQ exceeds reasonably attainable upper limit.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489):

glycerol 56-81-5 >= 50 - < 70 %

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Zinc chloride (ZnCl2) 7646-85-7 >= 0 - < 0.1 %

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Zinc chloride (ZnCl2) 7646-85-7 >= 0 - < 0.1 %

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

glycerol 56-81-5

Pennsylvania Right To Know

glycerol 56-81-5 Water 7732-18-5

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Permissible Exposure Limits for Chemical Contaminants

glycerol 56-81-5

The ingredients of this product are reported in the following inventories:

DSL : This product contains the following components listed on the

Canadian NDSL. All other components are on the Canadian

DSL.

Alkaline phosphatase

AICS : Not in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

KECI : On the inventory, or in compliance with the inventory

PICCS : Not in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

Alkaline Phosphatase Buffer, 10x conc.

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with

known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act



Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Water 7732-18-5 1,3-Propanediol, 2-amino-2-(hydroxymethyl)-, hydrochloride 1185-53-1 (1:1)

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : Not in compliance with the inventory

ISHL : Not in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

Phosphatase, alkaline

GHS label elements

Not a hazardous substance or mixture.

Alkaline Phosphatase Buffer, 10x conc.

GHS label elements

Not a hazardous substance or mixture.



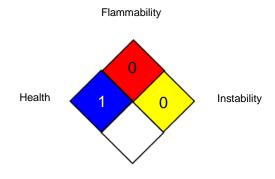
Phosphatase, alkaline (AP), MB Grade (1U/µI)

Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



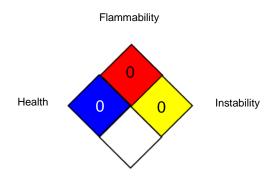
Special hazard

HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

NFPA 704:



Special hazard

HMIS® IV:

HEALTH	1	0
FLAMMABILITY		0
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Distributor

MilliporeSigma 3050 Spruce Street SAINT LOUIS MO 63103 USA

Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen,



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Version Revision Date: Date of last issue: 09-19-2019
1.8 02-07-2021 Date of first issue: 09-17-2015

Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG -Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL -No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS -Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 02-07-2021

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8 / 2004