Safety Data Sheet

Cat. # 786-628

HOOK™ 6X His Protein Spin Purification Kit (Bacteria): Nickel Resin

Size: 25

Bacterial PELB Buffer

Safety Data Sheet

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

Date of issue: 06/11/2013 Revision date: 05/11/2017 Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form	:	Mixture
Product name	:	Bacterial PELB Buffer
Product code	:	001B

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

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	:	If you feel unwell, seek medical advice.
First-aid measures after inhalation	:	Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	:	Wash skin with plenty of water.
First-aid measures after eye contact	:	Rinse eyes with water as a precaution.
First-aid measures after ingestion	:	Call a poison center/doctor/physician if you feel unwell.

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 nasal mucous membranes.
Symptoms/effects after skin contact	:	No effects known.
Symptoms/effects after eye contact	:	Slight irritation. Redness of the eye tissue.
Symptoms/effects after ingestion	:	AFTER INGESTION OF HIGH QUANTITIES: Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Loss of appetite. Tremor. Muscular pain. Mental confusion. Disturbances of consciousness.
Symptoms/effects upon intravenous administration	:	No effects known.

Chronic symptoms	:	ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Coughing. Conjunctivitis. Affection of the nasal septum. High arterial pressure.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	:	Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	:	No unsuitable extinguishing media known.

5.2. Specific hazards arising from the chemical

Fire hazard	:	DIRECT FIRE HAZARD: Non combustible.

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.
Protection during firefighting	:	Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	:	Gloves. Protective clothing. Dust cloud production: compressed air/oxygen apparatus.
Emergency procedures	:	Ventilate spillage area.

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	:	Take up liquid spill into absorbent material.
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	:	Ensure good ventilation of the work station. Wear personal protective equipment.
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

Bacterial PELB Buffer
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

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	Clear
Odor	:	None
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

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
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
Viscosity, kinematic	:	No data available
Symptoms/effects after inhalation	:	AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	:	No effects known.
Symptoms/effects after eye contact	:	Slight irritation. Redness of the eye tissue.
Symptoms/effects after ingestion	:	AFTER INGESTION OF HIGH QUANTITIES: Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Loss of appetite. Tremor. Muscular pain. Mental confusion. Disturbances of consciousness.
Symptoms/effects upon intravenous administration	:	No effects known.
Chronic symptoms	:	ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Coughing. Conjunctivitis. Affection of the nasal septum. High arterial pressure.

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.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	:	Waste treatment methods.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Other information : No supplementary information available.

Transportation of Dangerous Goods

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

EU-Regulations

National regulations

No additional information available

15.3. US State regulations

SECTION 16: Other information

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

Revision date : 05/11/2017

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.

His Binding/ Wash Buffer

Safety Data Sheet

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

Date of issue: 01/01/2017 Revision date: 05/11/2017 Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : His Binding/ Wash Buffer

Product code : 020H

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

Skin corrosion/irritation Category 2	H315	Causes skin irritation
Serious eye damage/eye irritation Category 2	H319	Causes serious eye irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Warning

Hazard statements (GHS US) : H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS US) : P264 - Wash hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see supplemental first aid instruction on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.

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
1H-imidazole	1,3-diaza-2,4-cyclopentadiene / 1,3-diazole / 1H Imidazole / formamidine, N,N'-vinylene- / glyoxaline / imidazole / IMUTEX / MIAZOLE / N,N'-vinyleneformamidine / pyrro(b)monazole / USAF EK4733	(CAS-No.) 288-32-4	<= 2	Acute Tox. 4 (Oral), H302 Skin Corr. 1C, H314

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 : If you feel unwell, seek medical advice.

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. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell.

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 nasal mucous membranes.

Symptoms/effects after skin contact : No effects known.

Symptoms/effects after eye contact : Slight irritation. Redness of the eye tissue.

Symptoms/effects after ingestion : AFTER INGESTION OF HIGH QUANTITIES: Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Loss of appetite. Tremor. Muscular pain. Mental confusion. Disturbances of consciousness.

Symptoms/effects upon intravenous administration : No effects known.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Coughing. Conjunctivitis. Affection of the nasal septum. High arterial pressure.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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.

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. 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	:	Prevent dust cloud formation. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess 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. Thoroughly clean/dry the installation before use. 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. Store locked up.
Storage temperature	:	RT

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

His Binding/ Wash Buffer
No additional information available

1H-imidazole (288-32-4)
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

Materials for protective clothing:

GIVE GOOD RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. PVC

Hand protection:

Gloves

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	:	None
Odor threshold	:	No data available
pH	:	8
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

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

1H-imidazole (288-32-4)	
LD50 oral rat	970 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Experimental value, Oral)
ATE US (oral)	970 mg/kg body weight

Skin corrosion/irritation	:	Causes skin irritation. pH: 8
Serious eye damage/irritation	:	Causes serious eye irritation. pH: 8
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
Viscosity, kinematic	:	No data available
Symptoms/effects after inhalation	:	AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact	:	No effects known.
Symptoms/effects after eye contact	:	Slight irritation. Redness of the eye tissue.
Symptoms/effects after ingestion	:	AFTER INGESTION OF HIGH QUANTITIES: Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Loss of appetite. Tremor. Muscular pain. Mental confusion. Disturbances of consciousness.
Symptoms/effects upon intravenous administration	:	No effects known.
Chronic symptoms	:	ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Coughing. Conjunctivitis. Affection of the nasal septum. High arterial pressure.

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.

1H-imidazole (288-32-4)	
LC50 fish 1	283.6 mg/l (Other, 48 h, Leuciscus idus, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 Daphnia 1	341.5 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)
ErC50 (algae)	133 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

1H-imidazole (288-32-4)	
Persistence and degradability	Readily biodegradable in the soil. Readily biodegradable in water.

12.3. Bioaccumulative potential

1H-imidazole (288-32-4)	
Log Pow	-0.02 (Weight of evidence approach, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

1H-imidazole (288-32-4)	
Log Koc	1.36 - 2.32 (log Koc, Calculated value)
Ecology - soil	Low potential for adsorption in soil.

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. Remove waste in accordance with local and/or national regulations. Recycle/reuse.
Additional information	:	Can be considered as non 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

SECTION 15: Regulatory information

15.1. US Federal regulations

1H-imidazole (288-32-4)
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

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

Revision date : 05/11/2017

Full text of H-phrases:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H319	Causes serious eye irritation

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.

His Elution Buffer

Safety Data Sheet

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

Date of issue: 01/01/2017 Revision date: 05/11/2017 Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : His Elution Buffer

Product code : 021H

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

Skin corrosion/irritation Category 2 H315 Causes skin irritation
Serious eye damage/eye irritation Category 2 H319 Causes serious eye irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Warning

Hazard statements (GHS US) : H315 - Causes skin irritation
H319 - Causes serious eye irritation

Precautionary statements (GHS US) : P264 - Wash hands, forearms and face thoroughly after handling.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 - If on skin: Wash with plenty of water
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P321 - Specific treatment (see supplemental first aid instruction on this label)
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.

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
Deionized water		(CAS-No.) 7732-18-5	> 94	Not classified

Name	Common Name (Synonyms)	Product identifier	%	GHS US classification
Sodium phosphate monobasic	acid sodium phosphate / acid sodium phosphate, anhydrous / E339(a) food grade / monobasic sodium phosphate / monosodium dihydrogen orthophosphate / monosodium dihydrogen phosphate / monosodium dihydrogen phosphate, anhydrous / monosodium hydrogen phosphate / monosodium orthophosphate / monosodium orthophosphate, anhydrous / monosodium phosphate / monosodium phosphate, anhydrous / monosorb XP-4 / MSP / MSP, anhydrous / phosphoric acid monosodium salt, anhydrous / phosphoric acid, monosodium salt / primary-sodium phosphate / primary-sodiumphosphate, anhydrous / sodium acid phosphate / sodium acid phosphate, anhydrous / sodium biphosphate / sodium biphosphate, anhydrous / sodium dihydrogen monophosphate / sodium dihydrogen phosphate / sodium dihydrogen phosphate (NaH2PO4) / sodium dihydrogen phosphate, anhydrous / sodium dihydrogenorthophosphate / sodium monobasic phosphate (NaH2PO4) / sodium orthophosphate, primary / sodium phosphate (Na(H2PO4)) / sodium phosphate, monobasic / sodium phosphate, monobasic, anhydrous / sodium primary phosphate	(CAS-No.) 7558-80-7	< 2	Not classified
1H-imidazole	1,3-diaza-2,4-cyclopentadiene / 1,3-diazole / 1H Imidazole / formamidine, N,N'-vinylene- / glyoxaline / imidazole / IMUTEX / MIAZOLE / N,N'-vinyleneformamidine / pyrro(b)monazole / USAF EK4733	(CAS-No.) 288-32-4	<= 2	Acute Tox. 4 (Oral), H302 Skin Corr. 1C, H314

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 : If you feel unwell, seek medical advice.

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. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Victim is fully conscious: immediately induce vomiting. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell.

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 nasal mucous membranes.

Symptoms/effects after skin contact : No effects known.

Symptoms/effects after eye contact : Slight irritation. Redness of the eye tissue.

Symptoms/effects after ingestion : AFTER INGESTION OF HIGH QUANTITIES: Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Loss of appetite. Tremor. Muscular pain. Mental confusion. Disturbances of consciousness.

Symptoms/effects upon intravenous administration : No effects known.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Coughing. Conjunctivitis. Affection of the nasal septum. High arterial pressure.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

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.

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. 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 : Prevent dust cloud formation. Scoop solid spill into closing containers. Clean contaminated surfaces with an excess 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. Thoroughly clean/dry the installation before use. 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. Store locked up.

Storage temperature : RT

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

His Elution Buffer
No additional information available

Sodium phosphate monobasic (7558-80-7)
No additional information available

Deionized water (7732-18-5)
No additional information available

1H-imidazole (288-32-4)
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

Materials for protective clothing:

GIVE GOOD RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. PVC

Hand protection:

Gloves

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	:	None
Odor threshold	:	No data available
pH	:	8
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

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 phosphate monobasic (7558-80-7)	
LD50 oral rat	8290 mg/kg (Rat, Oral)
LD50 dermal rabbit	> 7940 mg/kg (Rabbit, Dermal)

1H-imidazole (288-32-4)	
LD50 oral rat	970 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Experimental value, Oral)
ATE US (oral)	970 mg/kg body weight

Skin corrosion/irritation : Causes skin irritation.
pH: 8
Serious eye damage/irritation : Causes serious eye irritation.
pH: 8
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
Viscosity, kinematic : No data available
Symptoms/effects after inhalation : AFTER INHALATION OF DUST/MIST: Dry/sore throat. Coughing. Irritation of the nasal mucous membranes.
Symptoms/effects after skin contact : No effects known.
Symptoms/effects after eye contact : Slight irritation. Redness of the eye tissue.
Symptoms/effects after ingestion : AFTER INGESTION OF HIGH QUANTITIES: Nausea. Vomiting. Irritation of the gastric/intestinal mucosa. Loss of appetite. Tremor. Muscular pain. Mental confusion. Disturbances of consciousness.
Symptoms/effects upon intravenous administration : No effects known.
Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation. Coughing. Conjunctivitis. Affection of the nasal septum. High arterial pressure.

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 phosphate monobasic (7558-80-7)	
LC50 fish 1	> 2400 mg/l (OECD 203: Fish, Acute Toxicity Test, 48 h, Leuciscus idus)

1H-imidazole (288-32-4)	
LC50 fish 1	283.6 mg/l (Other, 48 h, Leuciscus idus, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 Daphnia 1	341.5 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)
ErC50 (algae)	133 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, Nominal concentration)

12.2. Persistence and degradability

Sodium phosphate monobasic (7558-80-7)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

1H-imidazole (288-32-4)	
Persistence and degradability	Readily biodegradable in the soil. Readily biodegradable in water.

12.3. Bioaccumulative potential

Sodium phosphate monobasic (7558-80-7)	
Log Pow	-3.96 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

1H-imidazole (288-32-4)	
Log Pow	-0.02 (Weight of evidence approach, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

1H-imidazole (288-32-4)	
Log Koc	1.36 - 2.32 (log Koc, Calculated value)
Ecology - soil	Low potential for adsorption in soil.

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. Remove waste in accordance with local and/or national regulations. Recycle/reuse.

Additional information : Can be considered as non 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

SECTION 15: Regulatory information

15.1. US Federal regulations

Sodium phosphate monobasic (7558-80-7)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

Deionized water (7732-18-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

1H-imidazole (288-32-4)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Deionized water (7732-18-5)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

National regulations

No additional information available

15.3. US State regulations

SECTION 16: Other information

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

Revision date : 05/11/2017

Full text of H-phrases:

H302	Harmful if swallowed
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H319	Causes serious eye irritation

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.

PE LB™-Lysozyme

Safety Data Sheet

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

Date of issue: 06/03/2013 Revision date: 05/11/2017 Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : PE LB™-Lysozyme

Product code : 033P

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

This mixture does not contain any substances to be mentioned according to the criteria of section 3.2 of HazCom 2012

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

First-aid measures after skin contact : Wash skin with plenty of water.

First-aid measures after eye contact : Rinse eyes with water as a precaution.

First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

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

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

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

Methods for cleaning up : Take up liquid spill into absorbent material.

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 : Ensure good ventilation of the work station. Wear personal protective equipment.

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.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

PE LB™-Lysozyme
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

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid

Color : Cloudy

Odor	:	None
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

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
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
Viscosity, kinematic	:	No data available

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.

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	:	Waste treatment methods.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Other information	:	No supplementary information available.

Transportation of Dangerous Goods

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

EU-Regulations

National regulations

No additional information available

15.3. US State regulations

SECTION 16: Other information

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

Revision date	:	05/11/2017

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.

Nickel Chelating Resin

Safety Data Sheet

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

Date of issue: 11/24/2015 Revision date: 05/11/2017 Version: 7.1

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Product name : Nickel Chelating Resin

Product code : 060N_059N_062N_061N

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

Flammable liquids Category 4	H227	Combustible liquid
Respiratory sensitization, Category 1	H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
Skin sensitization, Category 1	H317	May cause an allergic skin reaction
Germ cell mutagenicity Category 2	H341	Suspected of causing genetic defects
Specific target organ toxicity (repeated exposure) Category 1	H372	Causes damage to organs through prolonged or repeated exposure
Hazardous to the aquatic environment - Acute Hazard Category 3	H402	Harmful to aquatic life
Hazardous to the aquatic environment - Chronic Hazard Category 3	H412	Harmful to aquatic life with long lasting effects

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :

Signal word (GHS US) : Danger

Hazard statements (GHS US) : H227 - Combustible liquid
H317 - May cause an allergic skin reaction
H334 - May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H341 - Suspected of causing genetic defects
H372 - Causes damage to organs through prolonged or repeated exposure
H402 - Harmful to aquatic life
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements (GHS US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 - Wash hands, forearms and face thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P272 - Contaminated work clothing must not be allowed out of the workplace
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P284 - [In case of inadequate ventilation] wear respiratory protection.
P302+P352 - If on skin: Wash with plenty of water
P304+P341 - If inhaled: If breathing is difficult, remove person to fresh air and keep

comfortable for breathing
P308+P313 - If exposed or concerned: Get medical advice/attention.
P314 - Get medical advice/attention if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label)
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P342+P311 - If experiencing respiratory symptoms: Call a poison center or doctor
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use media other than water to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

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
ethanol	ethanol (ethyl alcohol) / ethanol, anhydrous, undenatured / ethyl alcohol	(CAS-No.) 64-17-5	10 - 50	Flam. Liq. 2, H225
nickel dichloride, hexahydrate	nickel chloride (NiCl2), hexahydrate / nickel dichloride, hexahydrate / nickel(II)chloride, hexahydrate / nickelous chloride, hexahydrate	(CAS-No.) 7791-20-0	2 - 5	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

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 : IF exposed or concerned: Get medical advice/attention. Call a poison center/doctor/physician if you feel unwell.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a poison center or a doctor.

First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact : Rinse eyes with water as a precaution.

First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

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

Symptoms/effects after inhalation : May cause an allergy or asthma symptoms or breathing difficulties if inhaled.

Symptoms/effects after skin contact : May cause an allergic skin reaction.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

5.2. Specific hazards arising from the chemical

Fire hazard : Combustible liquid.

5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Do not breathe dust/fume/gas/mist/vapors/spray. Only qualified personnel equipped with suitable protective equipment may intervene. No open flames, no sparks, and no smoking.

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. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

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 : Ensure good ventilation of the work station. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes. Take all necessary technical measures to avoid or minimize the release of the product on the workplace. Limit quantities of product at the minimum necessary for handling and limit the number of exposed workers. Provide local exhaust or general room ventilation. Floors, walls and other surfaces in the hazard area must be cleaned regularly. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hygiene measures : Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Separate working clothes from town clothes. Launder separately.

7.2. Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Nickel Chelating Resin	
No additional information available	
ethanol (64-17-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH STEL (ppm)	1000 ppm
nickel dichloride, hexahydrate (7791-20-0)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH TWA (mg/m³)	0.1 mg/m³ (Inhalable fraction)

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

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Liquid
Color	:	No data available
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	:	65 °C
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

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

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

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

ethanol (64-17-5)	
LD50 oral rat	10740 mg/kg body weight (Rat; OECD 401: Acute Oral Toxicity; Experimental value)
LD50 dermal rabbit	> 16000 mg/kg (Rabbit; Literature study)
LC50 inhalation rat (mg/l)	> 20 mg/l (4 h, Rat, Inhalation)

nickel dichloride, hexahydrate (7791-20-0)	
ATE US (oral)	100 mg/kg body weight
ATE US (gases)	700 ppmV/4h
ATE US (vapors)	3 mg/l/4h
ATE US (dust, mist)	0.5 mg/l/4h

Skin corrosion/irritation	:	Not classified
Serious eye damage/irritation	:	Not classified
Respiratory or skin sensitization	:	May cause an allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.
Germ cell mutagenicity	:	Suspected of causing genetic defects.
Carcinogenicity	:	Not classified

ethanol (64-17-5)	
IARC group	1 - Carcinogenic to humans

Reproductive toxicity	:	Not classified
Specific target organ toxicity – single exposure	:	Not classified
Specific target organ toxicity – repeated exposure	:	Causes damage to organs through prolonged or repeated exposure.

nickel dichloride, hexahydrate (7791-20-0)	
Specific target organ toxicity – repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard	:	Not classified
Viscosity, kinematic	:	No data available
Symptoms/effects after inhalation	:	May cause an allergy or asthma symptoms or breathing difficulties if inhaled.
Symptoms/effects after skin contact	:	May cause an allergic skin reaction.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	:	Harmful to aquatic life with long lasting effects. Harmful to aquatic life.

ethanol (64-17-5)	
LC50 fish 1	14200 mg/l (US EPA, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
EC50 Daphnia 1	9300 mg/l (48 h, Daphnia magna, Pure substance)

12.2. Persistence and degradability

ethanol (64-17-5)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0.8 - 0.967 g O_2/g substance
Chemical oxygen demand (COD)	1.7 g O_2/g substance
ThOD	2.1 g O_2/g substance
BOD (% of ThOD)	0.43

nickel dichloride, hexahydrate (7791-20-0)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable

nickel dichloride, hexahydrate (7791-20-0)	
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

ethanol (64-17-5)	
BCF fish 1	1 (Other, 72 h, Cyprinus carpio, Static system, Fresh water, Read-across)
Log Pow	-0.35 (Experimental value; OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method; 24 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

nickel dichloride, hexahydrate (7791-20-0)	
BCF fish 1	40 - 1000 (Pisces, Nickel ion)
BCF other aquatic organisms 1	0.9 - 11.6 (Daphnia magna, Nickel ion)
BCF other aquatic organisms 2	250 - 1700 (Chlorophyta, Nickel ion)

12.4. Mobility in soil

ethanol (64-17-5)	
Surface tension	0.0245 N/m (20 °C)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods : Waste treatment methods.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

ethanol (64-17-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

nickel dichloride, hexahydrate (7791-20-0)
Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

ethanol (64-17-5)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

National regulations

ethanol (64-17-5)
Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

SECTION 16: Other information

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

Revision date : 05/11/2017

Full text of H-phrases:

H225	Highly flammable liquid and vapour
H227	Combustible liquid
H301	Toxic if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H331	Toxic if inhaled
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H341	Suspected of causing genetic defects
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H402	Harmful to aquatic life
H410	Very toxic to aquatic life with long lasting effects
H412	Harmful to aquatic life with long lasting effects

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.