

## 08/20/2020 Kit Components

Product code	Description

1632100	ReadyPrep <sup>TM</sup> Sequential Extraction Kit
1632100EDU	

## Components:

1632102	Sequential Extraction Reagent 1
1632103	Sequential Extraction Reagent 2
1632101	ReadyPrep™ TBP Reducing Agent
1632104	ReadyPrep Sequential Extraction Kit Reagent 3





Printing date 08/20/2020 Reviewed on 08/20/2020

#### 1 Identification

- · Product identifier
- · Trade name: Sequential Extraction Reagent 1
- · Catalog or product number: 1632102
- · CAS Number:

77-86-1

· EC number:

201-064-4

- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Bio-Rad Laboratories (Canada) Ltd.

1329 Meyerside Drive

Mississauga, Ontario

L5T 1C9

Canada

phone: 1-800-268-0213 Fax: 1-888-913-9779

- · Information department: sales canada@bio-rad.com
- · Emergency telephone number: 1-800-424-6723 option 2

#### 2 Hazard identification

· Classification of the substance or mixture

The substance is not classified, according to the Globally Harmonized System (GHS).

- · Label elements
- · GHS label elements Not Applicable
- · Hazard pictograms Not Applicable
- · Signal word Not Applicable
- · Hazard statements Not Applicable

#### 3 Composition/Information on ingredients

- · Chemical characterization: Substances
- · CAS No. Description:

77-86-1 Tris(hydroxymethyl)aminomethane

- Identification number(s):
- · EC number: 201-064-4
- · Additional information: For the wording of the listed risk phrases referto section 16.

### 4 First-aid measures

- · Description of first aid measures
- · General information No special measures required.
- · After inhalation Supply fresh air; consult doctor in case of complaints.
- · After skin contact Generally the product does not irritate the skin.
- · After eye contact Rinse opened eye for several minutes under running water.
- · After swallowing Rinse mouth with water. Seek medical attention and appropriate follow-up.

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# Safety Data Sheet according to HPR, Schedule 1

Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: Sequential Extraction Reagent 1

(Contd. of page 1)

- · Information for doctor
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

#### 5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

#### 6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- · Environmental precautions: No special measures required.
- · Methods and material for containment and cleaning up: Pick up mechanically.
- · Reference to other sections
- See Section 7 for information on safe handling
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

### 7 Handling and storage

- · Handling
- · Precautions for safe handling No special precautions are necessary if used correctly.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage
- · Requirements to be met by storerooms and receptacles: According to product specification
- · Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- · Specific end use(s) No further relevant information available.

#### 8 Exposure controls/ Personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace: Not required.
- · Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed.
- · Protection of hands: Protective gloves.

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Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: Sequential Extraction Reagent 1

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- Material of gloves Synthetic gloves
   Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection: Safety glasses

Information on basic physical and	chemical properties	
General Information	onemical properties	
Appearance:		
Form:	Solid	
Color:	White	
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value:	10.5-12	
Change in condition		
Melting point/Melting range:	171.2 °C	
Boiling point/Boiling range:	219 ℃	
Flash point:	Not applicable	
•	Not determined.	
Flammability (solid, gaseous)	Product is not flammable.	
Decomposition temperature:	Not determined.	
Auto igniting:	Not determined.	
Danger of explosion:	Not determined.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure:	Not applicable.	
Density at 20 °C:	0.84 g/cm³	
Relative density	Not determined.	
Vapor density	Not applicable.	
Evaporation rate	Not applicable.	
Solubility in / Miscibility with		
Water at 20 °C:	678 g/l	
Partition coefficient (n-octanol/wat	<b>er):</b> Not determined.	
Viscosity:		
dynamic:	Not applicable.	
kinematic:	Not applicable.	





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(Contd. of page 3)

· Other information

No further relevant information available.

#### 10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

### 11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · LD/LC50 values for hazardous components per OSHA criteria:

#### 77-86-1 Tris(hydroxymethyl)aminomethane

Oral LD50 5,900 mg/kg (Rat)
Dermal LD50 >5,000 mg/kg (Rat)

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritant effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

The substance is not subject to classification according to the latest version of the EU lists.

- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

Substance is not listed.

· NTP (National Toxicology Program)

Substance is not listed.

#### 12 Ecological information

- Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.

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Trade name: Sequential Extraction Reagent 1

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- Additional ecological information:
- · General notes: Generally not hazardous for water.
- · Results of PBT and vPvB assessment
- · **PBT**: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

### 13 Disposal considerations

- · Waste treatment methods
- · Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Dispose of waste in accordance to applicable national, regional, or local regulations.

- · Uncleaned packagings:
- · **Recommendation:** Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information		
· UN-Number	Not Degulated	
· DOT/TDG, ADR, ADN, IMDG, IATA	Not Regulated	
· UN proper shipping name		
· DOT/TDG, ADN, IMDG, IATA	Not Regulated	
· ADR	Not Regulated	
	Not Regulated	
· Transport hazard class(es)		
· DOT, ADR, ADN, IMDG, IATA		
· Class	Not Regulated	
· Packing group		
· DOT/TĎĞ, ADR, IMDG, IATA	Not Regulated	
· Environmental hazards:		
· Marine pollutant:	No	
· Special precautions for user	Not applicable.	
· Transport in bulk according to Annex II of N	IARPOL73/78	
and the IBC Code	Not applicable.	
· UN "Model Regulation":	Not Regulated	

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Trade name: Sequential Extraction Reagent 1

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### 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · SARA (Superfund Amendents and Reauthorization Act of 1986 USA)
- Section 302/304 (40CFR355.30 / 40CFR355.40):

Substance not listed.

Section 313 (40CFR372.65):

Substance is not listed.

· TSCA (Toxic Substances Control Act):

ACTIVE

· MAK (German Maximum Workplace Concentration)

Substance is not listed.

· National regulations

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

- · Water hazard class: Generally not hazardous for water.
- · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

#### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Environmental Health and Safety.
- · Contact:

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

- · Date of the latest revision of the safety data sheet 08/20/2020 / -
- · Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

\* \* Data compared to the previous version altered.

CA





Printing date 08/20/2020 Reviewed on 08/20/2020

#### 1 Identification

- · Product identifier
- Trade name: Sequential Extraction Reagent 2
- · Catalog or product number: 1632103, 9703561
- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Bio-Rad Laboratories (Canada) Ltd.

1329 Meyerside Drive Mississauga, Ontario

L5T 1C9

Canada phone: 1-800-268-0213 Fax: 1-888-913-9779

- · Information department: sales canada@bio-rad.com
- · Emergency telephone number: 1-800-424-6723 option 2

#### 2 Hazard identification

· Classification of the substance or mixture

The product is not classified, according to the Globally Harmonized System (GHS).

- · Label elements
- · GHS label elements Not Applicable
- · Hazard pictograms Not Applicable
- · Signal word Not Applicable
- · Hazard statements Not Applicable

### 3 Composition/Information on ingredients

- · Chemical characterization: Mixtures
- · Description: Mixture of the substances listed below with non-hazardous additions.
- · Listing of dangerous and non-hazardous components: Not applicable.
- · Additional information For the wording of the listed hazard phrases refer to section 16.

#### 4 First-aid measures

- · Description of first aid measures
- · General information No special measures required.
- · After inhalation Supply fresh air; consult doctor in case of complaints.
- · After skin contact Generally the product does not irritate the skin.
- · After eye contact Rinse opened eye for several minutes under running water.
- · After swallowing Rinse mouth with water. Seek medical attention and appropriate follow-up.
- · Information for doctor
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.



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# Safety Data Sheet according to HPR, Schedule 1

Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: Sequential Extraction Reagent 2

(Contd. of page 1)

### 5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

#### 6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- · Methods and material for containment and cleaning up: Pick up mechanically.
- · Reference to other sections

No dangerous substances are released.

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### 7 Handling and storage

- · Handling
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.
- · Conditions for safe storage, including any incompatibilities
- · Storage
- · Requirements to be met by storerooms and receptacles: According to product specification
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: None.
- · Specific end use(s) No further relevant information available.

#### 8 Exposure controls/ Personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- Personal protective equipment
- · General protective and hygienic measures The usual precautionary measures for handling chemicals should be followed.
- · Protection of hands: Protective gloves.
- · Material of gloves Synthetic gloves

(Contd. on page 3)





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Trade name: Sequential Extraction Reagent 2

(Contd. of page 2)

• Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection: Safety glasses

Information on basic physical and	chemical properties	
General Information	chomical proportion	
Appearance:		
Form:	Solid	
Color:	White	
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value at 20°C:	9.2	
Change in condition		
Melting point/Melting range:	135 °C	
Boiling point/Boiling range:	undetermined	
Flash point:	Not applicable	
•	Not determined.	
Flammability (solid, gaseous)	Not determined.	
Decomposition temperature:	Not determined.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Not determined.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure:	Not applicable.	
Density:	Not determined	
Relative density	Not determined.	
Vapor density	Not applicable.	
Evaporation rate	Not applicable.	
Solubility in / Miscibility with		
Water at 20 °C:	800 g/l	
	Fully miscible	
Partition coefficient (n-octanol/wa	ter): Not determined.	
Viscosity:		
dynamic:	Not applicable.	
kinematic:	Not applicable.	
Solvent content:		
Water:	0.2 %	





Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: Sequential Extraction Reagent 2

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Solids content: 99.7 %

• Other information No further relevant information available.

### 10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

### 11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · LD/LC50 values for hazardous components per OSHA criteria:

57-13-6 urea

Oral LD50 14,500 mg/kg (rat)

- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritant effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

## 12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.

(Contd. on page 5)





Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: Sequential Extraction Reagent 2

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- · Additional ecological information:
- · General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

## 13 Disposal considerations

- · Waste treatment methods
- · Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Dispose of waste in accordance to applicable national, regional, or local regulations.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

Transport information	
· UN-Number · ADR, ADN, IMDG, IATA	Not Regulated
· UN proper shipping name · ADR, ADN, IMDG, IATA	Not Regulated
· Transport hazard class(es)	
· ADR, ADN, IMDG, IATA · Class	Not Regulated
· Packing group · ADR, IMDG, IATA	Not Regulated
· Environmental hazards: · Marine pollutant:	No
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MA and the IBC Code	NOT applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.

(Contd. on page 6)





Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: Sequential Extraction Reagent 2

(Contd. of page 5)

#### 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · SARA (Superfund Amendents and Reauthorization Act of 1986 USA)
- Section 302/304 (40CFR355.30 / 40CFR355.40):

None of the ingredients is listed.

· Section 313 (40CFR372.65):

None of the ingredients is listed.

· ISCA (Toxic Substances Control Ac	t)	)	١.	•	•		,	,		Į	1	•	;										;	;	;	;	;	,	,	;			;	;	;	;	;	;	;	;	;	;		;	;	;	;	;	;	;	;		;	;			;	;	;	;	;	;	;	;	;	;	;			;	;	•	•	•		;		;	;		ĺ	1	(	į	١				4			ı	)		ı		,	,	,	_		(		ì	S	:	•	Е	(	•	C	(	1	ľ		1	ć	ć	ľ	1	3	S	),	)		l		ı
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57-13-6	urea	ACTIVE
77-86-1	Tris(hydroxymethyl)aminomethane	ACTIVE
7732-18-5	water	ACTIVE

#### · MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· National regulations

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

- · Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

#### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Environmental Health and Safety.
- · Contact:

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

- Date of the latest revision of the safety data sheet 08/20/2020 / -
- · Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

CA





Printing date 08/20/2020 Reviewed on 07/29/2020

#### 1 Identification

- · Product identifier
- · Trade name: ReadyPrep™ TBP Reducing Agent
- · Catalog or product number: 1632101, 1632101EDU
- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Bio-Rad Laboratories (Canada) Ltd.

1329 Meyerside Drive Mississauga, Ontario

L5T 1C9 Canada

phone: 1-800-268-0213 Fax: 1-888-913-9779

- · Information department: sales canada@bio-rad.com
- · Emergency telephone number: 1-800-424-6723 option 2

#### 2 Hazard identification

· Classification of the substance or mixture

Acute Toxicity (Oral) - Category 4 H302 Harmful if swallowed. Skin Irritation - Category 2 H315 Causes skin irritation.

Serious Eye Damage - Category 1 H318 Causes serious eye damage.

Reproductive Toxicity - Category 1B H360 May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure - Category 3 H335 May cause respiratory irritation.

- · Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms







GHS05 GHS07 GHS08

- · Signal word Danger
- · Hazard-determining components of labeling:

N-methyl-2-pyrrolidone tributylphosphine

· Hazard statements

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H360 May damage fertility or the unborn child.

H335 May cause respiratory irritation.

Precautionary statements

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy

to do. Continue rinsing.

P310 Immediately call a poison center/doctor. P321 Specific treatment (see on this label).

(Contd. on page 2)





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(Contd. of page 1)

P330 Rinse mouth.

P362+P364 Take off contaminated clothing and wash it before reuse.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

#### 3 Composition/Information on ingredients

- · Chemical characterization: Mixtures
- · Description: Mixture of the substances listed below with non-hazardous additions.

· Listing o	f dangerous and non-hazardous components:	
872-50-4	N-methyl-2-pyrrolidone	80-100% w/w *
	Reproductive Toxicity - Category 1B, H360 Skin Irritation - Category 2, H315; Eye Irritation - Category 2A, H319; Specific Target Organ Toxicity - Single Exposure - Category 3, H335 Flammable Liquids - Category 4, H227	
998-40-3	tributylphosphine	3-<5% w/w *
	Flammable Liquids - Category 3, H226; Self-heating Substances and Mixtures - Category 1, H251	
	Oxidizing Liquids – Category 2, H272	
	Acute Toxicity (Oral) - Category 3, H301; Acute Toxicity (Dermal) - Category 3, H311	
	Skin Corrosion - Category 1B, H314; Serious Eye Damage - Category 1, H318	

<sup>\*</sup> Actual concentration ranges are withheld as a trade secret.

#### 4 First-aid measures

- · Description of first aid measures
- · General information

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

- · After inhalation Supply fresh air; consult doctor in case of complaints.
- · After skin contact

Immediately wash with water and soap and rinse thoroughly.

Immediately rinse with water.

- · After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.
- · After swallowing

Immediately call a doctor.

Rinse mouth with water. Seek medical attention and appropriate follow-up.

- · Information for doctor
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

<sup>·</sup> Additional information For the wording of the listed hazard phrases refer to section 16.





Printing date 08/20/2020 Reviewed on 07/29/2020

Trade name: ReadyPrep™ TBP Reducing Agent

(Contd. of page 2)

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### 5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: Wear self-contained respiratory protective device.

#### 6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures

Wear protective equipment (See section 8). Keep unprotected persons away. Wear protective clothing.

- · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

· Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### 7 Handling and storage

- · Handling
- · Precautions for safe handling

No special measures required.

Ensure good ventilation/exhaust at the workplace.

Open and handle receptacle with care.

Prevent formation of aerosols.

- · Information about protection against explosions and fires: Keep respiratory protective device available.
- Conditions for safe storage, including any incompatibilities
- Storage
- · Requirements to be met by storerooms and receptacles: According to product specification
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

### 8 Exposure controls/ Personal protection

· Additional information about design of technical systems: No further data; see item 7.

(Contd. on page 4)





Printing date 08/20/2020 Reviewed on 07/29/2020

Trade name: ReadyPrep™ TBP Reducing Agent

(Contd. of page 3)

- · Control parameters
- · Components with limit values that require monitoring at the workplace:

### 872-50-4 N-methyl-2-pyrrolidone

EV TWA: 400 mg/m<sup>3</sup>

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Avoid contact with the skin.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

· Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Not necessary if room is well-ventilated. Adequate ventilation required.

- · Protection of hands: Protective gloves.
- · Material of gloves Synthetic gloves
- · Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection:

Safety glasses

Tightly sealed goggles.

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sical and			

- · Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form:
Color:
Coloress
Odor:
Odor threshold:

PH-value:

Liquid
Colorless
Amine-like
Not determined.

· Change in condition

Melting point/Melting range: -24 °C Boiling point/Boiling range: undetermined

· Flash point: Not applicable Not determined.

· Flammability (solid, gaseous) Not applicable.

(Contd. on page 5)





Printing date 08/20/2020 Reviewed on 07/29/2020

Trade name: ReadyPrep™ TBP Reducing Agent

	(Contd. o	f page
Ignition temperature:	270 ℃	
Decomposition temperature:	Not determined.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Not determined.	
Explosion limits:		
Lower:	1.3 Vol %	
Upper:	9.5 Vol %	
Vapor pressure at 20 °C:	0.3 hPa	
Density at 20 °C:	1.013 g/cm³	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Fully miscible	
Partition coefficient (n-octanol/wa	ater): Not determined.	
Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
Solvent content:		
Organic solvents:	95.8 %	
Other information	No further relevant information available.	

### 10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known
- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

#### 11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:
- · LD/LC50 values for hazardous components per OSHA criteria:

#### 872-50-4 N-methyl-2-pyrrolidone

Oral LD50 3,600 mg/kg (rat)

(Contd. on page 6)



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# Safety Data Sheet according to HPR, Schedule 1

Printing date 08/20/2020 Reviewed on 07/29/2020

Trade name: ReadyPrep™ TBP Reducing Agent

(Contd. of page 5)

#### Dermal LD50 8,000 mg/kg (rbt)

- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.
- · on the eye:

Strong caustic effect.

Strong irritant with the danger of severe eye injury.

Irritant effect.

- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful

Irritant

- · Carcinogenic categories
- · IARC (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

### 12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · **vPvB:** Not applicable.
- · Other adverse effects No further relevant information available.

#### 13 Disposal considerations

- · Waste treatment methods
- · Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Dispose of waste in accordance to applicable national, regional, or local regulations.

(Contd. on page 7)





Printing date 08/20/2020 Reviewed on 07/29/2020

Trade name: ReadyPrep™ TBP Reducing Agent

(Contd. of page 6)

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

14 Transport information		
· UN-Number · DOT/TDG, ADR, ADN, IMDG, IATA	Not Regulated	
· UN proper shipping name · DOT/TDG, ADN, IMDG, IATA · ADR	Not Regulated Not Regulated Not Regulated	
· Transport hazard class(es)		
· DOT, ADR, ADN, IMDG, IATA · Class	Not Regulated	
· Packing group · DOT/TDG, ADR, IMDG, IATA	Not Regulated	
· Environmental hazards: · Marine pollutant:	No	
· Special precautions for user	Not applicable.	
· Transport in bulk according to Annex II of MA and the IBC Code	ARPOL73/78 Not applicable.	
· UN "Model Regulation":	Not Regulated	

### 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- · SARA (Superfund Amendents and Reauthorization Act of 1986 USA)
- Section 302/304 (40CFR355.30 / 40CFR355.40):

None of the ingredients is listed.

- · Section 313 (40CFR372.65):
- 872-50-4 N-methyl-2-pyrrolidone
- · TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· MAK (German Maximum Workplace Concentration)

None of the ingredients is listed.

· National regulations

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

(Contd. on page 8)



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# Safety Data Sheet according to HPR, Schedule 1

Printing date 08/20/2020 Reviewed on 07/29/2020

Trade name: ReadyPrep™ TBP Reducing Agent

(Contd. of page 7)

· Technical instructions (air):

Class	Share in %
NK	80-100

- · Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

#### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Environmental Health and Safety.
- · Contact:

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

- · Date of the latest revision of the safety data sheet 08/20/2020 / -
- · Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative

· \* Data compared to the previous version altered.

CA





Printing date 08/20/2020 Reviewed on 08/20/2020

#### 1 Identification

- · Product identifier
- · Trade name: ReadyPrep Sequential Extraction Kit Reagent 3
- · Catalog or product number: 1632104, 9703562
- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Bio-Rad Laboratories (Canada) Ltd.

1329 Meyerside Drive Mississauga, Ontario

L5T 1C9

Canada phone: 1-800-268-0213 Fax: 1-888-913-9779

- · Information department: sales\_canada@bio-rad.com
- Emergency telephone number: 1-800-424-6723 option 2

#### 2 Hazard identification

· Classification of the substance or mixture

Carcinogenicity – Category 2 H351 Suspected of causing cancer.

Reproductive Toxicity - Category 2 H361 Suspected of damaging fertility or the unborn child.

- · Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms



GHS08

- · Signal word Warning
- · Hazard-determining components of labeling:

thiourea

· Hazard statements

H351 Suspected of causing cancer.

H361 Suspected of damaging fertility or the unborn child.

Precautionary statements

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: ReadyPrep Sequential Extraction Kit Reagent 3

(Contd. of page 1)

### 3 Composition/Information on ingredients

- · Chemical characterization: Mixtures
- · Description: Mixture of the substances listed below with non-hazardous additions.

· Listing of dangerous and non-hazardous components:		
	62-56-6 thiourea	
	Carcinogenicity – Category 2, H351; Reproductive Toxicity - Category 2, H361 Acute Toxicity (Oral) - Category 4, H302	
55179-31-2	1-(4-biphenylyloxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanol	1-5% w/w *
	Acute Toxicity (Inhalation) - Category 3, H331 Acute Toxicity (Oral) - Category 4, H302; Acute Toxicity (Dermal) – Category 4, H312	

<sup>\*</sup> Actual concentration ranges are withheld as a trade secret.

#### 4 First-aid measures

- · Description of first aid measures
- · General information No special measures required.
- · After inhalation Supply fresh air; consult doctor in case of complaints.
- · After skin contact Generally the product does not irritate the skin.
- · After eye contact Rinse opened eye for several minutes under running water.
- · After swallowing Rinse mouth with water. Seek medical attention and appropriate follow-up.
- · Information for doctor
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- · Indication of any immediate medical attention and special treatment needed No further relevant information available.

#### 5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · Protective equipment: No special measures required.

#### 6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- · Environmental precautions:

Do not allow product to reach sewage system or any water course.

Inform respective authorities in case of seepage into water course or sewage system.

Do not allow to enter sewers/ surface or ground water.

· Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

(Contd. on page 3)

<sup>·</sup> Additional information For the wording of the listed hazard phrases refer to section 16.



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# Safety Data Sheet according to HPR, Schedule 1

Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: ReadyPrep Sequential Extraction Kit Reagent 3

(Contd. of page 2)

· Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

#### 7 Handling and storage

- Handling
- Precautions for safe handling Open and handle receptacle with care.
- · Information about protection against explosions and fires: Keep respiratory protective device available.
- · Conditions for safe storage, including any incompatibilities
- · Storage
- · Requirements to be met by storerooms and receptacles: According to product specification
- · Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

### 8 Exposure controls/ Personal protection

- · Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- · Exposure controls
- · Personal protective equipment
- · General protective and hygienic measures

Keep away from foodstuffs, beverages and feed.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

- · Breathing equipment: Not necessary if room is well-ventilated. Adequate ventilation required.
- · Protection of hands: Protective gloves.
- · Material of gloves Synthetic gloves
- Penetration time of glove material

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· Eye protection: Safety glasses

#### 9 Physical and chemical properties

- · Information on basic physical and chemical properties
- · General Information
- · Appearance:

Form: Liquid

(Contd. on page 4)





Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: ReadyPrep Sequential Extraction Kit Reagent 3

	(Contd. of	pag
Color:	Light yellow	
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	undetermined	
Boiling point/Boiling range:	undetermined	
Flash point:	Not applicable	
	Not determined.	
Flammability (solid, gaseous)	Not applicable.	
Ignition temperature:	440 °C	
Decomposition temperature:	Not determined.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Not determined.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure:	Not determined.	
Density:	Not determined	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Fully miscible	
· Partition coefficient (n-octanol/water): Not determined.		
Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
Solvent content:		
Water:	0.2 %	
Solids content:	99.7 %	
Other information	No further relevant information available.	

## 10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- · Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known

(Contd. on page 5)





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Trade name: ReadyPrep Sequential Extraction Kit Reagent 3

(Contd. of page 4)

- · Conditions to avoid No further relevant information available.
- · Incompatible materials: No further relevant information available.
- · Hazardous decomposition products: No dangerous decomposition products known

### 11 Toxicological information

- Information on toxicological effects
- · Acute toxicity:

•	· LD/LC50 values for hazardous components per OSHA criteria:		
	57-13-6 urea		
	Oral	LD50	14,500 mg/kg (rat)
	62-56-6 thiourea		
	Oral	LD50	1,750 mg/kg (rat)

- Primary irritant effect:
- on the skin: No irritant effect.

Dermal LD50 2,800 mg/kg (rbt)

- · on the eye: No irritant effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)	
62-56-6 thiourea	3
· NTP (National Toxicology Program)	
62-56-6 thiourea	R

### 12 Ecological information

- Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- · Additional ecological information:
- · General notes:

Water hazard class 2 (Self-assessment): hazardous for water.

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

- · Results of PBT and vPvB assessment
- · PBT: Not applicable.
- · vPvB: Not applicable.

(Contd. on page 6)





Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: ReadyPrep Sequential Extraction Kit Reagent 3

(Contd. of page 5)

· Other adverse effects No further relevant information available.

## 13 Disposal considerations

- · Waste treatment methods
- · Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system. Dispose of waste in accordance to applicable national, regional, or local regulations.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.

UN-Number DOT/TDG, ADR, IMDG, IATA	UN2810
UN proper shipping name DOT/TDG	Toxic, liquids, organic, n.o.s. (thiourea, 1-(4-biphenylyloxy 3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2-butanol)
ADR	2810 TOXIC LIQUID, ORGANIC, N.O.S. (thiourea, 1-(abiphenylyloxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2 butanol), ENVIRONMENTALLY HAZARDOUS 2810 TOXIC LIQUID, ORGANIC, N.O.S. (thiourea, ß-([1,7] biphenyl]-4-yloxy)-alpha-tert-butyl-1H-1,2,4-triazol-1-ethanol,
IMDG, IATA	TOXIC LIQUID, ORGANIC, N.O.S. (thiourea, 1-(abiphenylyloxy)-3,3-dimethyl-1-(1H-1,2,4-triazol-1-yl)-2,butanol)
Transport hazard class(es)	
DOT, ADR, IMDG, IATA	
Class	6.1 Toxic substances
Label	6.1
Packing group DOT/TDG, ADR, IMDG, IATA	III
Environmental hazards:	
Marine pollutant:	No
Special marking (ADR):	Symbol (fish and tree)
Special precautions for user	Warning: Toxic substances
Hazard identification number (Kemler code):	60
EMS Number:	F-A,S-A
Stowage Category Stowage Code	A SW2 Clear of living quarters.
Slowaye Code	3772 Olear Or IIVITIY Quarters.

(Contd. on page 7)





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Trade name: ReadyPrep Sequential Extraction Kit Reagent 3

	(Contd. of page 6)
· Transport/Additional information:	
· DOT/TDG · Quantity limitations	Void Void
· ADR · Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 2810 TOXIC LIQUID, ORGANIC, N.O.S. (THIOUREA, 1- (4-BIPHENYLYLOXY)-3,3-DIMETHYL-1-(1H-1,2,4-TRIAZOL- 1-YL)-2-BUTANOL), 6.1, III, ENVIRONMENTALLY HAZARDOUS

## 15 Regulatory information

- · Safety, health and environmental regulations/legislation specific for the substance or mixture
- SARA (Superfund Amendents and Reauthorization Act of 1986 USA)

None of the ingredients is listed.			
· Section 3	· Section 313 (40CFR372.65):		
62-56-6 th	62-56-6 thiourea		
•	· TSCA (Toxic Substances Control Act):		
57-13-6	urea	ACTIVE	
62-56-6	thiourea	ACTIVE	
77-86-1	Tris(hydroxymethyl)aminomethane	ACTIVE	
7732-18-5	water	ACTIVE	
· MAK (German Maximum Workplace Concentration)			

### 62-56-6 thiourea

Section 302/304 (40CFR355.30 / 40CFR355.40):

3B

#### · National regulations

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

· Technical instructions (air):

Class	Share in %
1	20-30

· Water hazard class: Water hazard class 2 (Self-assessment): hazardous for water.

(Contd. on page 8)



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# Safety Data Sheet according to HPR, Schedule 1

Printing date 08/20/2020 Reviewed on 08/20/2020

Trade name: ReadyPrep Sequential Extraction Kit Reagent 3

(Contd. of page 7)

· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- · Department issuing SDS: Environmental Health and Safety.
- · Contact:

Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000

- · Date of the latest revision of the safety data sheet 08/20/2020 / -
- · Abbreviations and acronyms:

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

· \* Data compared to the previous version altered.

CA