

08/06/2020 Kit Components

Product code Description		
1705012 1705012EDU	Immun-Star™ Substrate Pack Kit	
Components:		
1705018	Immun-Star TM Substrate	
1705019	Immun-Star TM Enhancer	



Printing date 08/06/2020 Reviewed on 07/29/2020

1 Identification

- · Product identifier
- · Trade name: Immun-Star™ Substrate
- · Catalog or product number: 1705018, 1705018EDU, 9702837, 9702838
- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Bio-Rad Laboratories, Life Science Group

2000 Alfred Nobel Drive

Hercules, California 94547

(510)741-1000

- · Information department: lsg_techserv_us@bio-rad.com
- · Emergency telephone number:

1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.

510-741-1000

2 Hazard(s) identification

· Classification of the substance or mixture

Eye Irrit. 2A H319 Causes serious eye irritation.

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



GHS07

- · Signal word Warning
- · Hazard statements

H319 Causes serious eye irritation.

· Precautionary statements

P264 Wash thoroughly after handling.
P280 Wear eye protection / face protection.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to

do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

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

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Safety Data Sheet acc. to OSHA HCS

Printing date 08/06/2020 Reviewed on 07/29/2020

Trade name: Immun-Star™ Substrate

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3 Composition/information on ingredients

· Chemical characterization: Substances

· CAS No. Description:

7732-18-5 water

- · Identification number(s):
- · EC number: 231-791-2
- · Chemical characterization: Mixtures
- · Description: Mixture of the substances listed below with non-hazardous additions.
- · Listing of dangerous and non-hazardous components:

111-42-2 2,2'-iminodiethanol Carc. 2, H351; STOT RE 2, H373 1-2.5% Eye Dam. 1, H318 Acute Tox. 4, H302; Skin Irrit. 2, H315

· Additional information For the wording of the listed risk phrases refer to section 15.

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. If symptoms persist, consult a doctor.
- · 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: Wear self-contained respiratory protective device.

6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- · Environmental precautions: Dilute with plenty of water.
- · Methods and material for containment and cleaning up:

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

· 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.

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Printing date 08/06/2020 Reviewed on 07/29/2020

Trade name: Immun-Star™ Substrate

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See Section 13 for disposal information.

Protective Action Criteria for Chemicals

· Frotective Action Criteria for Chemicals	
· PAC-1:	
2,2'-iminodiethanol	3 mg/m³
· PAC-2:	
111-42-2 2,2'-iminodiethanol	28 mg/m³
· PAC-3:	
111-42-2 2,2'-iminodiethanol	130 mg/m³

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: 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.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

Avoid contact with the eyes.

Avoid contact with the eyes and skin.

- · 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.

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Trade name: Immun-Star™ Substrate

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· **Eye protection:** Safety glasses Tightly sealed goggles.

Physical and chemical prope	erties	
Information on basic physical and	I chemical properties	
General Information	onomical proportion	
Appearance:		
Form:	Liquid	
Color:	Colorless	
Odor:	Odorless	
Odor threshold:	Not determined.	
pH-value at 20 °C:	10.6	
Change in condition		
Melting point/Melting range:	0 ℃	
Boiling point/Boiling range:	undetermined	
Flash point:	Not applicable	
•	Not determined.	
Flammability (solid, gaseous)	Not applicable.	
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 at 20 °C:	23 hPa	
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/wa	ter): Not determined.	
Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
Solvent content:		
Organic solvents:	2.0 %	
Water:	95.0 %	

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Trade name: Immun-Star™ Substrate

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Solids content: 3.0 %

• 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:

111-42-2 2,2'-iminodiethanol

Oral LD50 710 mg/kg (rat)
Dermal LD50 12,200 mg/kg (rbt)

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

Irritant

· Carcinogenic categories

· IARC (International Agency for Research on Cancer)

111-42-2 2,2'-iminodiethanol

2B

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Target organs: Eye.

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Trade name: Immun-Star™ Substrate

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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: 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.

UN-Number		
DOT, ADR, ADN, IMDG, IATA	Not Regulated	
UN proper shipping name		
DOT, 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, ADR, IMDG, IATA	Not Regulated	
Environmental hazards:		
Marine pollutant:	No	
Special precautions for user	Not applicable.	





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	(Conta. or page o)
· Transport in bulk according to Annex II of MARPOLT	3/78
and the IBC Code	Not applicable.
· Transport/Additional information:	Not dangerous according to the above specifications.
· 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):
- 111-42-2 2,2'-iminodiethanol
- · TSCA (Toxic Substances Control Act):

7732-18-5 water ACTIVE 111-42-2 2,2'-iminodiethanol ACTIVE

- · Hazardous Air Pollutants
- 111-42-2 2,2'-iminodiethanol
- · California Proposition 65:
- · Chemicals known to cause cancer:

111-42-2 2,2'-iminodiethanol

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Developmental Toxicity

None of the ingredients is listed.

- · Carcinogenic categories
- · EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

111-42-2 2,2'-iminodiethanol

2,2 minodionario

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

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Trade name: Immun-Star™ Substrate

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- · National regulations
- · Technical instructions (air):

Class	Share in %
NK	1 - 2.5

- · 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 preparation / last revision 08/06/2020 / -
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 4: Acute toxicity – Category 4

Skin Irrit. 2: Skin corrosion/irritation – Category 2

Eye Dam. 1: Serious eye damage/eye irritation - Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation - Category 2A

Carc. 2: Carcinogenicity - Category 2

STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2

· * Data compared to the previous version altered.





Printing date 08/06/2020 Reviewed on 07/29/2020

1 Identification

- · Product identifier
- · Trade name: Immun-Star™ Enhancer
- · Catalog or product number: 1705019, 1705019EDU, 9702900
- · Application of the substance / the mixture Laboratory chemicals
- · Details of the supplier of the safety data sheet
- · Manufacturer/Supplier:

Bio-Rad Laboratories, Life Science Group

2000 Alfred Nobel Drive

Hercules, California 94547

(510)741-1000

- · Information department: lsg_techserv_us@bio-rad.com
- · Emergency telephone number:

1(800)424-9300 Use only in the event of a CHEMICAL EMERGENCY involving a SPILL, LEAK, FIRE, EXPLOSION or ACCIDENT.

510-741-1000

2 Hazard(s) 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
- · Other hazards
- · Results of PBT and vPvB assessment
- · **PBT:** Not applicable.
- · vPvB: Not applicable.

3 Composition/information on ingredients

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

7732-18-5 water

- · Identification number(s):
- · EC number: 231-791-2
- · Chemical characterization: Mixtures
- · Description: Mixture of the substances listed below with non-hazardous additions.
- · Listing of dangerous and non-hazardous components:

Poly(benzyltributyl)ammonium chloride

Acute Tox. 3, H301 1-2.5%

· Additional information For the wording of the listed risk phrases refer to section 15.

(Contd. on page 2)





Printing date 08/06/2020 Reviewed on 07/29/2020

Trade name: Immun-Star™ Enhancer

(Contd. of page 1)

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: Dilute with plenty of water.
- Methods and material for containment and cleaning up:

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

· 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.

Protective Action Criteria for Chemicals

· PAC-1:

None of the ingredients is listed.

· PAC-2:

None of the ingredients is listed.

· PAC-3:

None of the ingredients is listed.

7 Handling and storage

- · Handling
- · Precautions for safe handling No special measures required.
- · Information about protection against explosions and fires: No special measures required.

(Contd. on page 3)





Printing date 08/06/2020 Reviewed on 07/29/2020

Trade name: Immun-Star™ Enhancer

(Contd. of page 2)

- · 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.
- · Breathing equipment: Not 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

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 Information on basic physical and General Information Appearance: 	chemical properties
Form:	Liquid
Color:	Colorless
· Odor:	Odorless
· Odor threshold:	Not determined.
· pH-value at 20 °C:	9.5
· Change in condition Melting point/Melting range: Boiling point/Boiling range:	0 °C undetermined
· Flash point:	Not applicable Not determined.
· Flammability (solid, gaseous)	Not applicable.
· Decomposition temperature:	Not determined.

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Trade name: Immun-Star™ Enhancer

		(Contd. of page
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Not determined.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure at 20 °C:	23 hPa	
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/w	rater): Not determined.	
Viscosity:		
dynamic:	Not determined.	
kinematic:	Not determined.	
Solvent content:		
Water:	95.0 %	
Solids content:	3.0 %	
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:
- · Primary irritant effect:
- · on the skin: No irritant effect.
- · on the eye: No irritant effect.
- · Sensitization: No sensitizing effects known.

(Contd. on page 5)



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Safety Data Sheet acc. to OSHA HCS

Printing date 08/06/2020 Reviewed on 07/29/2020

Trade name: Immun-Star™ Enhancer

(Contd. of page 4)

· 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.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

· Target organs: Not applicable.

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: 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
- · DOT, ADR, ADN, IMDG, IATA

Not Regulated

(Contd. on page 6)





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Trade name: Immun-Star™ Enhancer

	(Contd. of page 5
· UN proper shipping name · DOT, 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, 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.
· Transport/Additional information:	Not dangerous according to the above specifications.
· 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):

None of the ingredients is listed.

· TSCA (Toxic Substances Control Act):

7732-18-5 water ACTIVE

· Hazardous Air Pollutants

None of the ingredients is listed.

- · California Proposition 65:
- · Chemicals known to cause cancer:

The product does not contain listed components.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Developmental Toxicity

None of the ingredients is listed.

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Trade name: Immun-Star™ Enhancer

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- · Carcinogenic categories
- · EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

- · National 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 preparation / last revision 08/06/2020 / -
- · Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 3: Acute toxicity - Category 3

· * Data compared to the previous version altered.

US