

Immagina Biotechnology S.r.l.

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RiboLace 360 TE Gel Free (#360SQ-12) consist of tubes, bottles and one plate containing aqueous solutions, salts enzymes, magnetic beads, glycerol, detergents and oligos. Components list:

- Binding buffer (BB)
- Wash buffer (WB)
- RiboLace magnetic beads (RmB)
- OH-buffer (OH)
- Lysis buffer (LB)
- RiboLace smart probe (RsP)
- Nuclease (Nux)
- mPEG
- Nux Enhancer (NE)
- G1F Buffer (G1F)
- Buffer BL1 (BL1)
- L1 enzyme (L1)
- ATP (10 mM) and ATP (1 mM)
- Buffer L2 (BL2)
- L2 enzyme (L2)
- MnCl₂
- GTP
- Linker MC+
- Buffer L3 (BL3)
- Enzyme L3 (L3)
- PEG 8000 (PEG)
- Primer RT_T (RT_T)
- Buffer L4 (BL4)
- L4 Enzyme (L4)
- dNTPs
- DTT
- AR enzyme (AR)
- L5 enzyme (L5)
- Fw PCR1 (F1)
- Rev PCR1 (R1)
- TR buffer (TR)
- 3P-RNA 1 μM (RNA)
- iUDIs plate

A Safety Data Sheet is provided for 10% Triton X-100, Sodium Hydroxide, Cycloheximide, Peg8000, glycerol, DTT, RiboLace magnetic beads (RmB) and RiboLace smart probe (RsP).

Nux Enhancer (NE), Nuclease (Nux), L1 enzyme (L1), L2 enzyme (L2), enzyme L3 (L3), L4 Enzyme (L4), L5 enzyme (L5), AR enzyme (AR), GTP, dNTPs, ATP (10 mM and 1 mM), G1F Buffer (G1F), Buffer BL1 (BL1), Buffer BL2 (BL2), Buffer BL3 (BL3), Buffer BL4 (BL4), TR buffer (TR), mPEG are classified as not hazardous according to regulation (EC) 1272/2008 [GHS]. Linker MC+, Primer RT_T (RT_T), Fw PCR1 (F1), Rev PCR1 (R1) and 3P-RNA 1 μM (RNA) are oligos and are classified as not hazardous according to regulation (EC) 1272/2008 [GHS]. Oligos in the iUDIs plate are present at concentrations <0.1% and is not known to be hazardous.

IMMAGINA BIOTECHNOLOGY srl recommends all normal precautions. We recommend always wearing gloves and avoiding direct contact with skin and eyes when handling biochemical and chemical reagents and solutions. Information in this MSDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and IMMAGINA BIOTECHNOLOGY srl assumes no liability resulting from the use of this MSDS. The user must determine suitability of this information for his application.

Section 1: Company and Chemical Identification

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Chemical Name: Glycerol

This MSDS contains information about glycerol and applies to *IMMAGINA BIOTECHNOLOGY* products supplied as aqueous solutions containing 50% glycerol including Nuclease (Nux) (#IBT0091).

Section 2: Composition and Information on Hazardous Ingredients

Component **Glycerol**

CAS No 56-81-5 % Wt 50

Synonyms Glycerin, glyceritol, glycyol alcohol, 1,2,3-Propanetriol, Trihydroxypropane, 1,2,3-trihydroxypropane

Section 3: Hazards Identification



Hazard statements

H319 Causes serious eye 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.

Section 4: First Aid Measures

Emergency and first aid information:

Ingestion: Wash mouth with water and seek medical advice immediately. Do not induce vomiting.

Inhalation: Remove to fresh air. Give artificial respiration if not breathing. Call a physician if breathing becomes difficult and give oxygen.

Contact: Flush with copious amounts of water for at least 15 minutes while removing clothing and shoes.

Consult a physician if persistent rash develops.

Section 5: Fire Fighting Measures

Extinguishing Media: Water spray, carbon dioxide, dry chemical powder or appropriate foam. **Special Fire Fighting Procedures:** Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. **Unusual Fire and explosions hazards:** Emits toxic fumes under fire conditions.

Section 6: Accidental Release Measures

Wear appropriate protective clothing and respirator. Dike and absorb with a suitable inert absorbent (e.g., sand or vermiculite). Place in closed waste container for disposal. Avoid contact with skin and eyes. Ventilate area and wash spill site after material clean-up is complete.

Section 7: Handling and Storage

Respiratory protection: if needed, use appropriate respiratory protection approved by NIOSH/MSHA or appropriate agency. **Ventilation:** Mechanical (general) or local exhaust as needed. Keep mist levels low. **Personal Protective Equipment:** Protective, chemical-resistant gloves, safety glasses or goggles, and lab coat are recommended. Access to safety shower and eyewash. **Work/Hygienic practices:** Avoid contact with eyes, skin and clothes. Wash thoroughly after handling.

Additional Information: Violent or explosive reactions can occur upon direct contact with sodium hydride, phosphorous trioxide, perchloric acid, chlorine, calcium hypochlorite, nitric acid and hydrofluoric acid, nitric acid and sulfuric acid, sodium peroxide, hydrogen peroxide or potassium permanganate.

Section 8: Exposure Controls/Personal Protection

Wear appropriate NIOSH/MSHA- approved respirator, chemical-resistant gloves, safety goggles, and other protective equipment and clothing. Mechanical exhaust required. Safety shower and eye bath. Do not breathe vapor. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Wash thoroughly after handling. Keep in a cool dry place.

Section 9: Physical and Chemical Properties

Appearance and odor: viscous, colorless, odorless liquid

Boiling Point: 182°C @ 20 mm

Solubility in H₂O: Miscible (>10%)

Vapor Density: 3.1

Freezing Pt (50% aqueous sol'n): -23°C

Melting Pt: 20°C

Specific Gravity: 1.261

Vapor Pressure: 3 mm @ 20°C

Flash Point: 176°C

Extinguishing Media: Water, CO₂, Dry chemicals

Fire fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Unusual fire or explosion hazards: Contact with strong oxidizers may cause fire or explosion. May emit toxic fumes.

Section 10: Stability and Reactivity

Stability: Stable

Incompatibility: Strong oxidizing agents, Strong bases

Hazardous decomposition products: Carbon monoxide, carbon dioxide

Hazardous polymerization: Does not occur

Section 11: Toxicological Information

Acute Effects: May be harmful by inhalation, ingestion, or absorption through skin. Causes eye & skin irritation. May be irritating to mucous membranes and upper respiratory tract. Prolonged exposure can cause nausea, headache and vomiting. **Chronic Effects:** Target organ: kidneys. To best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. RTECS: MA8050000 Glycerol

Irritation Data:

Skin rabbit: 500 MG/24H MLD

Eye rabbit: 126 MG MLD

Eye rabbit: 500 MG/24H MLD

Toxicity Data:

Oral rat: LD50:12600 MG/KG

Inhalation rat: LC50:>570 MG/M3/1H

IPR rat: LD50: 4420 MG/KG

SCU rat: LD50:100 MG/KG

IVN rat: LD50:5566 MG/KG

Oral mouse: LD50: 4090 MG/KG

IPR mouse: LD50: 8700 MG/KG

SCU mouse: LD50:91 MG/KG

IVN mouse: LD50: 4250 MG/KG

Oral rabbit: LD50: 27 GM/KG

Skin rabbit: LD50:>10 GM/KG

IVN rabbit: LD50:53 GM/KG

Oral guinea pig: LD50:7750 MG/KG

Target Organ Data

Behavioral (headache) Gastrointestinal (nausea and vomiting) paternal effects (spermatogenesis, testes, epididymis, sperm count) Effects of fertility (male fertility index) effects of fertility (post implantation mortality) only selected registry of toxic effects of chemical substances (RTECS) Data is presented here. See actual entry in RTECS for complete information.

Section 12: Ecological Information

No data available.

Section 13: Disposal Considerations

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14: Transport Information

No special considerations are known.

Section 15: Regulatory Information

European Information: irritant R36/38 Irritating to eyes and skin. S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36 Wear suitable protective clothing.

Reviews, standards and regulations:

OEL=MAK

ACGIH TLV-TWA 10 MG/M3, Inhalable particulate DTLVS* TLV/BEI, 1997 EPA FIFRA 1988 Pesticide subject to registration or re-registration

MSHA standard: nuisance particulates (mist)

DTLWS* 3,20,1973

OSHA PEL (GEN INDU): 8H TWA 15 MG/M3, Total dust CFRGBR 29,1910.1000,1994

OSH PEL (GEN INDU): 8H TWA 5 MG/M3, Respirable fraction CFRGBR 29,1910.1000,1994

OSHA PEL (construction) :8H TWA 15 MG/M3, total dust CFRGBR 29,1926.55, 1994

OSHA PEL (construction): 8H TWA 5 MG/M3 total dust CFRGBR 29, 1926.55,1994

OSH PEL (shipyard): 8H TWA 5 MG/M3, Respirable fraction CFRGBR 29,1915.1000,1993

OSH PEL (shipyard): 8H TWA 15 MG/M3, total dust CFRGBR 29,1915.1000,1993 OEL-Australia: TWA 10 MG/M3 Jan 1993

OEL-Belgium: TWA 20 MG/M3 Jan 1993

OEL-Finland: TWA 10 MG/M3 Jan 1993

OEL-France: TWA 10 MG/M3 Jan 1993

OEL-The Netherlands: TWA 10 MG/M3 Jan 1993

OEL-United Kingdom: TWA 10 KG/M3 Jan 1993

OEL-Bulgaria, Colombia, Jordan, Korea, check ACGIH TLV

OEL-New Zealand, Singapore, Vietnam check ACGIH TLV

NOHS 1974: HZD 35085; NIS 358, TNF 86657; NOW 198: TNE 1085329 NOES 1983: HZD 35085; NIS

310; TNF 67054; NOS 215; TNE 2135546; TFE 1346631 EPA TSCA Section 8 (B) Chemical Inventory

EPA TSCA Section 8 (D) Unpublished health/safety studies EPA TSCA Test submission (TSCATS)

Data base June 1998.

Section 16: Other Information

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This MSDS contains information about 10% Triton X-100 and applies to *IMMAGINA BIOTECHNOLOGY* products supplied as aqueous solutions B-buffer (BB, #IBT0021), Lysis buffer (LB, #IBT0031) and W-buffer (WB, #IBT0071).

Chemical Name: 10% Triton X-100

Section 2: Composition and Information on Hazardous Ingredients

Component	CAS No	%Wt
Triton X-100	9002-93-1	10%
Synonyms	Polyoxyethylene(10) glycol octylphenyl ether	
Water		90%

Section 3: Hazards Identification



Hazard statements

H302 Harmful if swallowed.

H315 Causes skin irritation.

H318 Causes serious eye damage.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements

P264 Wash skin thoroughly after handling.

P273 Avoid release to the environment.

P280 Wear protective gloves/ eye protection/ face protection.

P301 + P312 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell.

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.

Section 4: First Aid Measures

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Obtain medical assistance.

Ingestion: Obtain medical assistance if ingested. Medical supervision for at least 48 hours if ingested.

Skin contact: Immediately flush skin with plenty of water. Cover irritated skin with an emollient. Remove contaminated clothing and shoes. Wash skin with cold water. Wash and/or clean clothing and shoes before reuse. Obtain medical assistance.

Eye contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water (may be cold) for at least 15-20 minutes. Obtain medical assistance.

Health Effects and Symptoms

Inhalation: May be an irritant. Provide with fresh air. Monitor for symptoms if exposed.

Skin contact: May be a skin irritant.

Eye contact: Eye irritant, rinse with running water.

Section 5: Fire Fighting Measures

Fire: May be combustible at high temperature; slight fire hazard when solid form is exposed to flame.

Extinguishing media: water spray, dry chemical, alcohol foam, or carbon dioxide. Do not use water jet.

Explosion: Not considered an explosion hazard.

Hazardous decomposition: Carbon monoxide, carbon dioxide

Special fire fighting procedures: Fire fighters should wear NIOSH or equivalent approved positive pressure self-contained breathing apparatus and full protective gear. NFPA Ratings: Health 2 Flammability: 0 Reactivity: 0

Section 6: Accidental Release Measures

Remove all ignition sources. Ventilate area of leak or spill. Wear appropriate personal protective equipment.

Place in a suitable container for reclamation or disposal, using a method that does not generate dust. **Personal**

Protection: Wear splash goggles or safety glasses. Wear lab coat or protective suit, dust respirator, boots, gloves.

If large spill and material has dried use self-contained breathing apparatus and avoid inhalation.

Section 7: Handling and Storage

Handling: Avoid heat and sources of ignition. Thoroughly clean used containers before disposal. Do not ingest. Do not breathe

dust. Wear suitable protective laboratory clothing/equipment. If ingested Obtain medical assistance. Avoid contact with skin, eyes and clothing. Avoid incompatibles such as oxidizing agents. **Storage:** No special requirements

Section 8: Exposure Controls/Personal Protection

Airborne exposure limits: None established

Respiratory protection: dust respirator.

Ventilation: use process enclosures, local exhaust ventilation, or engineering controls if material solidifies.

Personal Protective Equipment: Labcoat, gloves, safety glasses or goggles.

Hygiene: Wash hands before eating or drinking. Avoid contact with eyes.

Section 9: Physical and Chemical Properties

Clear to hazy liquid. Mild odor.

Flash point greater than 100°C.

Section 10: Stability and Reactivity

Stability: Stable

Incompatibility: unknown

Hazardous decomposition products: carbon oxides

Hazardous polymerization: Will not occur

Section 11: Toxicological Information

Chronic Effects: Repeated or prolonged exposure is not known to aggravate medical condition **Irritation Data:** Skin, lung and eye irritant. No data available.

Toxicity Data: Toxic for fish

Carcinogenic, mutagenic, reproductive and teratogenic effects: Unknown.

Draize test, rabbit, eye: 10 µl of 100%/24H moderate

Draize test, rabbit, skin: 500 µl of 100%/24H mild.

Oral, rat: LD50 for 100%: 1800 mg/kg; 1900 or 3800 mg/kg

Section 12: Ecological Information

Ecotoxicity: Not available; Fish toxicity: bluegill TL (96 hour) Dynamic bioassay: > 10 mg/l Static bioassay: 12 mg/l

Toxicity of biodegradation: The product and degradation products are not toxic.

Section 13: Disposal Considerations

Dispose material and container in accordance with appropriate federal, state and local laws and regulations. Recover and recycle if possible. Processed material may require different disposal methods.

Section 14: Transport Information

No special considerations are known. No UN number. Not controlled under ADR (land, road/railway, IMDG (sea) or IATA (air) or ADN. No transport class or packaging group.

Section 15: Regulatory Information

Not listed under SARA 302/304 RQ, TPQ 311/312 or 313 list or category. Listed in inventory of TSCA, EC, Japan and Australia

Listed on Canada's DSL. WHMIS classification of D2B.

Not listed under Clean Water Act (CWA) parts 307, 311

No present on state lists for CA, PA, MN, MA, NJ or FL

Not listed under Clean air act (CAA) part 112 (toxic, flammable or release prevention not found) Not listed as class 1 or class 2 ozone depletory.

Water hazard class: Class 1; slightly hazardous for water.

Section 16: Other Information

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Chemical Name: Sodium Hydroxide

This MSDS contains information about Sodium Hydroxide and applies to *IMMAGINA BIOTECHNOLOGY* products OH-buffer (OH) (#IBT0051).

Section 2: Composition and Information on Hazardous Ingredients

Component	CAS No	Concentration
Sodium Hydroxide	1310-73-2	0.1-1M

Synonyms Caustic Soda; Soda Lye; White Caustic.

Section 3: Hazards Identification



Hazard statements

H314 Causes severe skin burns and eye damage.

Precautionary statements

P260 Do not breathe dusts or mists.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.

P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.

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

Section 4: First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult,

give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5: Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Contact with metals may evolve flammable hydrogen gas.

Extinguishing Media: Use water spray to cool fire-exposed containers. Substance is noncombustible; use agent most appropriate to extinguish surrounding fire.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 1

Section 6: Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8. **Spills/Leaks:** Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation.

Section 7: Handling and Storage

Handling: Wash thoroughly after handling. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Discard contaminated shoes. Use only with adequate ventilation. Do not breathe spray or mist.

Storage: Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Keep away from metals. Keep away from flammable liquids. Keep away from organic halogens.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium hydroxide	2 mg/m ³ Ceiling	10 mg/m ³ IDLH	2 mg/m ³ TWA

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Sodium hydroxide: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

Section 9: Physical and Chemical Properties

Physical State: Liquid

Appearance: clear

Odor: none reported

pH: Alkaline

Vapor Pressure: 14 mm Hg

Vapor Density: >1.0

Evaporation Rate:Not available.

Viscosity: >1 (ether=1)

Boiling Point: 212 deg F

Freezing/Melting Point:32 deg F

Decomposition Temperature:Not available.

Solubility: Soluble.

Specific Gravity/Density:1.0

Molecular Formula:NaOH

Molecular Weight:Not available.

Section 10: Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Acids.

Incompatibilities with Other Materials: Metals, acids, aluminum, tin, zinc.

Hazardous Decomposition Products: Toxic fumes of sodium oxide.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

LD50/LC50:

Draize test, rabbit, eye: 400 ug Mild; Draize test, rabbit, eye: 1% Severe; Draize test, rabbit, eye: 50 ug/24H Severe; Draize test, rabbit, eye: 1 mg/24H Severe; Draize test, rabbit, skin: 500 mg/24H Severe;

Carcinogenicity:

Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.

Epidemiology: No information found.

Teratogenicity: No information found.

Reproductive Effects: No information found.

Neurotoxicity: No information found.

Mutagenicity: No information found.

Other Studies: See actual entry in RTECS for complete information.

Section 12: Ecological Information

No data available.

Section 13: Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3.

Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14: Transport Information

US DOT Information: Proper shipping name: Sodium Hydroxide, Solid Hazard Class: 8

Packaging group: II

UN Number: UN1823

IATA: Proper shipping name: Sodium Hydroxide, Solid Hazard Class: 8

Packing group: II

UN Number: UN1823

IMO: Proper shipping name: Sodium Hydroxide, Solid Class: 8

UN Number: UN1823

Packing group: II

Marine Pollutant: No

Canadian TDG: Proper shipping name: Sodium Hydroxide, Solid

Section 15: Regulatory Information

US FEDERAL

TSCA

CAS# 1310-73-2 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

CERCLA Hazardous Substances and corresponding RQs

CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 1310-73-2: acute, reactive.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants. This material does not contain any Class 1 Ozone depletors. This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA. None of the chemicals in this product are listed as Priority Pollutants under the CWA. None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 1310-73-2 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

C Risk Phrases:

R 34 Causes burns.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 1310-73-2: 1

Canada - DSL/NDSL

CAS# 1310-73-2 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of E.

Canadian Ingredient Disclosure List

CAS# 1310-73-2 is listed on the Canadian Ingredient Disclosure List.

Exposure Limits

CAS# 1310-73-2: OEL -AUSTRALIA:TWA 2 mg/m³ OEL-BELGIUM:STEL 2 mg/m³ OEL-DENMARK:TWA 2 mg/m³ OEL-FINLAND:TWA 2 mg/m³ OEL-FRANCE:TWA 2 mg /m³ OEL-GERMANY:TWA 2 mg/m³ OEL-JAPAN:STEL 2 mg/m³ OEL-THE NETHERLA
NDS:TWA 2 mg/m³ OEL-THE PHILIPPINES:TWA 2 mg/m³ OEL-SWEDEN:TWA 2 mg/ m³
OEL-SWITZERLAND:TWA 2 mg/m³;STEL 4 mg/m³ OEL -THAILAND:TWA 2 mg/m³ OEL -
TURKEY:TWA 2 mg/m³ OEL-UNITED KINGDOM:TWA 2 mg/m³;STEL 2 mg/m³ OEL IN
BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW
ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16: Other Information

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Chemical Name: Cycloheximide

This MSDS contains information about Cycloheximide and applies to *IMMAGINA BIOTECHNOLOGY* products supplied as aqueous solutions containing 20 µg/mL Cycloheximide as Lysis Buffer (LB) (#IBT0031) and W-Buffer (WB) (#IBT0071).

Section 2: Composition and Information on Hazardous Ingredients

Component	CAS No
Cycloheximide	66-81-9

Section 3: Hazards Identification



Hazard statement(s)

H300 Fatal if swallowed.

H341 Suspected of causing genetic defects.

H360D May damage the unborn child.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER/ doctor.

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

Section 4: First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: POISON material. If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician: Treat symptomatically and supportively.

Section 5: Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. This material in sufficient quantity and reduced particle size is capable of creating a dust explosion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 4; Flammability: 1; Instability: 0

Section 6: Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

Section 7: Handling and Storage

Handling: Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

OSHA Vacated PELs: Cycloheximide: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9: Physical and Chemical Properties

Physical State: Powder

Appearance: white to beige

Odor: none reported

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate:Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point:107 - 114 deg C

Decomposition Temperature:Not available.

Solubility: Soluble.

Specific Gravity/Density:Not available.

Molecular Formula:C₁₅H₂₃NO₄

Molecular Weight:281.35

Section 10: Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, dust generation, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong bases, acid chlorides, acid anhydrides.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

RTECS#:

CAS# 66-81-9: MA4375000

LD50/LC50:

CAS# 66-81-9:

Draize test, rabbit, skin: 1 pph/24H Moderate;

Oral, mouse: LD50 = 133 mg/kg;

Oral, rat: LD50 = 2 mg/kg;

Carcinogenicity:

CAS# 66-81-9: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.

Teratogenicity: Teratogenic effects have occurred in experimental animals.

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: See actual entry in RTECS for complete information.

Neurotoxicity: No information available.

Other Studies:

Section 12: Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information available.

Physical: No information available.

Other: Do not empty into drains.

Section 13: Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14: Transport Information

	US DOT	Canada TDG
Shipping Name:	TOXIC SOLID, ORGANIC, N.O.S.	TOXIC SOLID, ORGANIC, N.O.S.
Hazard Class:	6.1	6.1
UN Number:	UN2811	UN2811
Packing Group:	I	I

Section 15: Regulatory Information

US FEDERAL

TSCA

CAS# 66-81-9 is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

CAS# 66-81-9: 100 lb lower threshold TPQ; 10000 lb upper threshold TPQ

SARA Codes

CAS # 66-81-9: immediate, delayed.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 66-81-9 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California Prop 65

WARNING: This product contains Cycloheximide, a chemical known to the state of California to cause developmental reproductive toxicity.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T+ N

Risk Phrases:

R 28 Very toxic if swallowed.

R 61 May cause harm to the unborn child.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

R 68 Possible risk of irreversible effects.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

S 61 Avoid release to the environment. Refer to special instructions /safety data sheets.

WGK (Water Danger/Protection)

CAS# 66-81-9: 3

Canada - DSL/NDSL

None of the chemicals in this product are listed on the DSL or NDSL list.

Canada - WHMIS

This product has a WHMIS classification of D1A, D2A.

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.

Canadian Ingredient Disclosure List

Section 16: Other Information

The above information is offered in good faith as accurate, but without guarantee, and should be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It doesn't represent any guarantee of the properties of the product. IMMAGINA BIOTECHNOLOGY srl shall not be held liable for any damage resulting from handling of from contact with the above product. All risks of use of the product should be assumed by the user.

Section 1: Company and Chemical Identification

Immagina Biotechnology S.r.l.

Viale dell'Industria 47, 38057 Pergine Valsugana (TN) Italy

Tel: **+39 0461 1787270**, info@immaginabiotech.com

Chemical Name: Smart Probe

This MSDS contains information about RiboLace Smart Probe and applies to *IMMAGINA BIOTECHNOLOGY* products RiboLace Smart Probe (RsP) (#IBT0012).

Section 2: Composition and Information on Hazardous Ingredients

Component	CAS No	Concentration
RiboLace Smart Probe		10 mM

Section 3: Hazards Identification

Classification of the substance or mixture



Hazard statement

H302 Harmful if swallowed.

Precautionary statements

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.

P330 Rinse mouth

P501 Dispose of contents/container to an approved waste disposal plant.

Section 4: First Aid Measures

Description of first aid measures

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled: If breathed in, remove to fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash skin with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section 5: Fire Fighting Measures

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, carbon dioxide, dry chemical powder or appropriate foam.

5.2 Specific hazards arising from the chemical

No data available

5.3 Special Firefighting Procedures

Wear self-contained breathing apparatus for firefighting if necessary

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations

Section 7: Handling and Storage

7.1 Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature: 2-8°C or -20°C.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8: Exposure Controls/Personal Protection

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

General industrial hygiene practice.

Personal protective equipment

Eye/face protection: Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Body Protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure: Do not let product enter drains.

Section 9: Physical and Chemical Properties

Physical State: Liquid

Appearance: Colorless

Odor: none reported

pH: Not available

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available

Freezing/Melting Point: Not available

Decomposition Temperature Not available

Specific Gravity/Density: Not available.

Molecular Formula: C₄₇H₇₁N₁₁O₁₄S

Molecular Weight: 1046.20

Section 10: Stability and Reactivity

no data available

Section 11: Toxicological Information

Acute toxicity:

Oral LD50: No data available Inhalation

LC50: No data available

Dermal LD50: No data available

Other information on acute toxicity: No data available

Skin corrosion/irritation: No data available

Serious eye damage/irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: No data available

Reproductive toxicity: No data available

Additional information: No data available

Section 12: Ecological Information

12.1 Toxicity: No data available

12.2 Persistence and degradability: No data available

12.3 Bioaccumulative potential: No data available

12.4 Mobility in soil: No data available

12.5 Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required or not conducted.

12.6 Other adverse effects: No data available

Section 13: Disposal Considerations

13.1 Waste treatment methods Product: Observe all federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Must not be disposed of together with household garbage.

Contaminated Packaging: Dispose of as unused product.

Section 14: Transport Information

No information available.

Section 15: Regulatory Information

No information available.

Section 16: Other Information

The above information is offered in good faith as accurate, but without guarantee, and should be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It doesn't represent any guarantee of the properties of the product. IMMAGINA BIOTECHNOLOGY srl shall not be held liable for any damage resulting from handling of from contact with the above product. All risks of use of the product should be assumed by the user.

Section 1: Company and Chemical Identification

Immagina Biotechnology S.r.l.

Viale dell'Industria 47, 38057 Pergine Valsugana (TN) Italy

Tel: **+39 0461 1787270**, info@immaginabiotech.com

Chemical Name: RiboLace magnetic beads (RmB)

This MSDS contains information about RiboLace magnetic beads (RmB) and applies to *IMMAGINA BIOTECHNOLOGY* products RiboLace magnetic beads (RmB) (#IBT0042).

Section 2: Composition and Information on Hazardous Ingredients

Component	CAS No
Agarose	9012-36-6
Maghemite	1332-37-2
Ethanol	64-17-5
Water	231-791-2

Section 3: Hazards Identification

Not classified as hazardous according to GHS

Classification of the substance or mixture Product definition: mixture.

Primary Routes of Exposure

Dermal contact, Ingestion.

Potential Health Effects Ingestion Might be harmful if ingested.

Skin: Might be harmful if absorbed through skin. Might cause skin irritation.

Eyes: Might cause eye irritation. Prolonged exposure might cause eye damage.

Inhalation: Might be harmful if inhaled.

Chronic Exposures: Not determined

Target Organs: Not determined

Label elements

Hazard statements Flammable liquid and vapor.

Precautionary statements

Prevention: Wear security gloves: 1-4 hours (breakthrough time): butyl rubber, neoprene.

Wear protection for eye or face: Recommended: safety goggles with side-shields. Keep away from heat, sparks, open flames and hot surfaces. - Not smoking. Use explosion-proof electrical, ventilating, and lighting and all material handling equipment.

Response: IF ON HAIR (or skin): Immediately take off all contaminated clothing. Wash skin with shower or water. Keep cool.

Storage Disposal: Dispose of contents and container in accordance with all international, national, regional,

local regulations.

Other hazards: no data available

Section 4: First Aid Measures

Description of first aid measures

Skin contact: Clean the affected area with large amounts of water. Remove contaminated clothes if indispensable. Search medical assistance if irritation persists.

Eye contact: immediately wash your eyes with water, occasionally lifting the upper and lower eyelids. Check for and remove contact lenses. Continue to wash for at least 11 minutes. Get medical attention if irritation occurs.

Oral exposure: Wash out mouth with fresh water. Remove dentures. Remove victim to fresh air and keep at rest in a comfortable position for breathing. If material had been swallowed and the exposed guy is conscious, give water to drink. Stop if the exposed person feels sick as vomiting, it may be dangerous. Don't induce vomiting unless directed to do so by medical personnel. If vomiting occurs, head should be kept low so that vomit doesn't enter the lungs. Get medical attention if adverse health effects persist.

Most important symptoms and effects, both acute and delayed

Potential acute health effects Inhalation No known significant effects or critical hazards

Ingestion No known significant effects or critical hazards

Skin contact No known significant effects or critical hazards

Eye contact No known significant effects or critical hazards

Over-exposure signs/symptoms

Skin contact No specific data

Ingestion No specific data

Inhalation No specific data

Eye contact No specific data

Indication of any immediate medical attention and special treatment needed

Notes to physician Treat symptomatically. Contact poison treatment specialist immediately if huge quantities had been ingested or inhaled.

Specific treatments No specific treatment.

Section 5: Fire Fighting Measures

Extinguishing media: Use foam (fog), dry chemical, CO2 or water spray.

Special hazards arising from the substance or mixture:

Hazards from the substance or mixture: Flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container might burst, with the risk of a subsequent huge explosion. Runoff to sewer might create fire or explosion hazard.

Hazardous combustion products: Decomposition products might include materials like: Carbon dioxide Carbon monoxide Metal oxide/oxides

Advice for fire-fighters : Promptly isolate the scene by removing all persons from the nearness of the incident if there is a fire. No action should be taken involving any personal risk or without suitable training. Move containers from fire area if those can be done without risk. Use water spray for keep fire-exposed containers cool.

Section 6: Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Throughout wear protective clothing, approved safety glasses and gloves when handling this chemical substance.

Environmental precautions: Avoid dispersal of material spilt and runoff and contact with soil, drains, waterways and sewers. Inform the major authorities if the product have caused environmental pollution (waterways, sewers soil or air).

Methods and material for containment and cleaning up

Small spills of material might be gathered with a wet wipe or swept up with water into a suitable container for disposal.

Reference to other sections: no data available

Section 7: Handling and Storage

Precautions for safe handling

Always wear protective clothing, approved safety glasses and gloves when handling this chemical substance.

Conditions for safe storage, including any incompatibilities

Store between 4 to 30°C

Specific end use(s): no data available

Section 8: Exposure Controls/Personal Protection

Control parameters:

Ethanol: Exposure limit values: TWA: 1920 mg/m 8 hours. TWA: 1000 ppm 8 hours.

Exposure controls: Use only with an adequate ventilation

Section 9: Physical and Chemical Properties

a) Appearance: Liquid with precipitate, solution: uncolored, Suspension: orange **b) Odour:** no data available

c) Odour Threshold: no data available

d) pH: 7-9

e) Melting point/freezing point: no data available

f) Initial boiling point and boiling range: no data available

g) Flash point: no data available

h) Evaporation rate: no data available

i) Flammability (solid, gas): Not applicable.

j) Upper/lower flammability or explosive limits: no data available

k) Vapour pressure: no data available

l) Vapour density: no data available

m) Relative density: no data available

n) Water solubility: soluble

o) Partition coefficient (n-octanol/water): no data available

p) Auto-ignition temperature: not applicable

q) Decomposition temperature: no data available

r) Viscosity: no data available

s) Explosive properties: No fire or explosion hazard known

t) Oxidizing properties: no data available

Section 10: Stability and Reactivity

Reactivity: no data available

Chemical stability: no data available

Possibility of hazardous reactions: no data available

Conditions to avoid: no data available

Incompatible materials: no data available

Hazardous decomposition products: Dangerous decomposition products might be formed under fire conditions but no data available.

Section 11: Toxicological Information

No information available

Section 12: Ecological Information

No information available.

Section 13: Disposal Considerations

No information available.

Section 14: Transport Information

No information available.

Section 15: Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture Approved Code of Practice

Safety Data Sheets for Substances and Preparations.

EU Legislation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/105/EC and 2000/21/EC, including amendments Regulation (EC) No 1272/2008 of the European

Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out

Section 16: Other Information

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Section 1: Company and Chemical Identification

Immagina Biotechnology S.r.l.

Viale dell'Industria 47, 38057 Pergine Valsugana (TN) Italy

Tel: **+39 0461 1787270**, info@immaginabiotech.com

Chemical Name: Peg8000 (#IBT0251)

Section 2: Composition and Information on Hazardous Ingredients

Component	CAS No	Weight %
Peg8000	25322-68-3	30 - 60

Section 3: Hazards Identification

Classification

Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard

Label Elements

None required

Hazards not otherwise classified (HNOC)

None identified

Section 4: First Aid Measures

4.1. Description of first aid measures

General advice

Immediate medical attention is required. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Remove from exposure, lie down. Do not breathe dust/fume/gas/mist/vapors/spray.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact

Wash skin with soap and water.

Inhalation

Remove to fresh air.

Ingestion

Clean mouth with water and drink afterwards plenty of water.

4.2. Most important symptoms and effects, both acute and delayed

No information available

Section 5: Fire Fighting Measures

5.1. Extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media CAUTION: Use of water spray when fighting fire may be inefficient.

5.2. Special hazards arising from the substance or mixture

No information available

5.3. Advice for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Ensure adequate ventilation, especially in confined areas. For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so.

Methods for cleaning up

Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. This material and its container must be disposed of as hazardous waste.

Section 7: Handling and Storage

7.1. Precautions for safe handling

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage temperature

Refer to protocol.

Storage Conditions

Keep/store only in original container.

Incompatible materials

None known based on information supplied.

Section 8: Exposure Controls/Personal Protection

8.1. Control parameters Exposure

Exposure Limits

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Peg 8000 25322-68-3	-	-	-	-	TWA: 1000 mg/m ³ Ceiling / Peak: 8000 mg/m ³
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Peg 8000 25322-68-3	STEL 4000 mg/m ³ TWA: 1000 mg/m ³	TWA: 1000 mg/m ³	-	-	-

8.2. Exposure controls

Engineering controls

Showers. Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles). Skin and body protection Wear suitable protective clothing and gloves.

Respiratory protection

Use in well ventilated areas.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Colorless
Odor	Mild
Odor threshold	No information available

Section 10: Stability and Reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Can react briskly with oxidizers - danger of explosion.

10.4. Conditions to avoid

Incompatible materials. Ignition sources. Heat.

10.5. Incompatible materials

Strong oxidizing agents.

10.6. Hazardous decomposition products

Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon monoxide. Carbon dioxide (CO₂).

Section 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity

Product information

Product does not present an acute toxicity hazard based on known or supplied information.

Inhalation

Avoid breathing vapors or mists

May cause irritation of respiratory tract

Eye contact

Redness

May cause slight irritation

Skin contact

Prolonged contact may cause redness and irritation

Repeated exposure may cause skin dryness or cracking

Ingestion

May cause drowsiness or dizziness

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

Symptoms include burning sensation, coughing, wheezing, shortness of breath, headache, nausea, and vomiting

Section 12: Ecological Information

12.1. Toxicity

50 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

Chemical Name
Pea 8000

Algae/aquatic plants
-

Fish
5000: 24 h Carassius auratus mg/L
LC50

Crustacea
-

12.2. Persistence and degradability

No information available

12.3. Bioaccumulative potential

No information available

12.4. Mobility in soil

No information available

12.5. Results of PBT and vPvB assessment

No information available

12.6. Other adverse effects

No information available

Endocrine disruptor information

No information available

Ozone

No information available

Section 13: Disposal Considerations

Dispose of in accordance with Federal, State, and local regulations.

Section 14: Transport Information

US DOT

Shipping Name: Not regulated.

Section 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National Regulations

Occupational Illnesses (R-463-3, France)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical work

International Inventories

All of the components in the product are on the following inventory lists TSCA (United States);, Canada (DSL Europe (EINECS/ELINCS), Australia (AICS), South Korea (KECL);, China (IECSC), Philippines (PICCS).

TSCA	Complies
EINECS	-
ELINCS	-
DSL	Complies
NDSL	Complies
PICCS	Complies
ENCS	-
IECSC	Complies
AICS	Complies
KECL	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

15.2. Chemical safety assessment

No information available

Section 16: Other Information

The above information is offered in good faith as accurate, but without guarantee, and should be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It doesn't represent any guarantee of the properties of the product. IMMAGINA BIOTECHNOLOGY srl shall not be held liable for any damage resulting from handling of from contact with the above product. All risks of use of the product should be assumed by the user.

Section 1: Company and Chemical Identification

Immagina Biotechnology S.r.l.

Viale dell'Industria 47, 38057 Pergine Valsugana (TN) Italy
Tel: **+39 0461 1787270**, info@immaginabiotech.com

Chemical Name: DTT (Dithiothreitol) (#IBT0291)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Acute toxicity, Oral (Category 4), H302

Long-term (chronic) aquatic hazard (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Warning

Hazard statement(s)

H302

Harmful if swallowed.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P273

Avoid release to the environment.

P301 + P312 + P330

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.

Supplemental Hazard Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms : threo-1,4-Dimercapto-2,3-butanediol
Cleland's reagent
DTT

Formula : C₄H₁₀O₂S₂

Molecular weight : 154,25 g/mol

CAS-No. : 3483-12-3

EC-No. : 222-468-7

Component	Classification	Concentration
(R*,R*)-1,4-Dimercaptobutane-2,3-diol	Acute Tox. 4; Aquatic Chronic 3; H302, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media Suitable

extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Sulphur oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Store in cool place. Recommended storage temperature 2 - 8 °C

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material:

Nitrile rubber

Minimum layer thickness: 0,11 mm

Break through time: 480 min

Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail

sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU)

EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|---|--|
| a) Appearance | Form: powder
Colour: white |
| b) Odour | unpleasant |
| c) Odour Threshold | No data available |
| d) pH | 4,0 - 6 at 15,4 g/l at 25 °C |
| e) Melting point/freezing point | Melting point/range: 41 - 44 °C No |
| f) Initial boiling point and boiling range | data available |
| g) Flash point | 113 °C - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | No data available |
| k) Vapour pressure | No data available |
| l) Vapour density | No data available |
| m) Relative density | No data available |
| n) Water solubility | 15,4 g/l at 20 °C |
| o) Partition coefficient: n-octanol/water | log Pow: 0,12 at 25 °C - Bioaccumulation is not expected., (Lit.)log Pow: -0,5 at 25 °C - Bioaccumulation is not expected. |
| p) Auto-ignition temperature | No data available |
| q) Decomposition temperature | No data available |
| r) Viscosity | No data available |
| s) Explosive properties | No data available |
| t) Oxidizing properties | No data available |

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

May decompose on exposure to moist air or water. Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Bases, Oxidizing agents, Reducing agents, Alkali metals

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides
Other decomposition products - No data available In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects Acute

toxicity

LD50 Oral - Rat - 400 mg/kg Remarks:
(External MSDS)

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: EK1610000

Nausea, Headache, Vomiting, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

No data available

Toxicity to daphnia
and other aquatic
invertebrates

static test EC50 - Daphnia magna (Water flea) - 27 mg/l - 48 h Remarks:
(ECOTOX Database)

12.2 Persistence and degradability

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Other adverse effects

Harmful to aquatic life with long lasting effects. No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods Product

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: -

IMDG: -

IATA: 3335

14.2 UN proper shipping name

ADR/RID: Not dangerous goods

IMDG: Not dangerous

goods

IATA: Aviation regulated solid, n.o.s. ((R*,R*)-1,4-Dimercaptobutane-2,3-diol)

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: 9

14.4 Packaging group

ADR/RID: -

IMDG: -

IATA: III

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

SECTION 15: Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information**Full text of H-Statements referred to under sections 2 and 3.**

H302

Harmful if swallowed.

H412

Harmful to aquatic life with long lasting effects.

Further information