Bioland Scientific LLC

Material Safety Data Sheet

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product name	**TRIS-Tricine-SDS running buffer (10X)**
Product Number	TTS
Brand	Bioland Chemicals
Company	Bioland Scientific LLC 14925 Paramount Blvd., Suite C Paramount, CA 90723 USA
Telephone	1-562-377-2668
Fax	1-562-733-6008
Emergency Phone #	1-562-377-2668

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

2.1 Substances

Component	CAS No	Weight %
Water	7732-18-5	69
Glycine, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-	5704-04-1	17.9
Tris (hydroxymethyl) aminomethane	77-86-1	12.1
Sodium lauryl sulfate	151-21-3	1

SECTION 3 : HAZARDS IDENTIFICATION

3.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable solids, H228
Specific target organ toxicity - single exposure, H335
Skin irritation, H315
Serious eye damage, H318
Respiratory irritation, H335
Toxic to aquatic life, H401

3.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word Danger

Hazard Statements

H228	Flammable solid
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H412	Harmful to aquatic life with long lasting effects
Precautionary Statements	
P210	Keep away from heat, hot surface, sparks, open flames and other ignition sources. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting/.../] equipment.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash hands [and ...] thoroughly after handling.
P264+P265	Wash hands [and ...] thoroughly after handling. Do not touch eyes.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P301+P317	IF SWALLOWED: Get emergency medical help.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P354+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing If eye irritation persists: Get medical advice/attention.
P319	Get medical help if you feel unwell.
P330	Rinse mouth.
P332+P317	IF SKIN irritation occurs: Get medical advice/attention.
P337+P317	If eye irritation persists: Get medical help.
P361+P364	Take off immediately all contaminated clothing. And wash it before reuse.
P370+P378	In case of fire: Use Carbon dioxide (CO 2). Powder. Water spray. to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container to suitable, closed containers.

3.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 4 : FIRST AID MEASURES

4.1 Description of first-aid measures

General Advice
If symptoms persist, call a physician.
Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Skin Contact
Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.
Inhalation
Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.
Ingestion
Clean mouth with water and drink afterwards plenty of water.

4.2 Most important symptoms and effects, both acute and delayed
None reasonably foreseeable.

4.3 Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5 : FIRE-FIGHTING MEASURES

5.1 Extinguishing media
No data available

5.2 Special Hazards arising from the substance or mixture
Nitrogen oxides (NOx). Sulfur oxides. Sodium oxides.

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

5.4 Further information
No data available.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Ensure adequate ventilation. Use personal protective equipment as required.

6.2 Environmental precautions
Should not be released into the environment. See Section 12 for additional Ecological Information.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material. 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
Wear personal protective equipment/face protection. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation.

7.2 Conditions for safe storage, including any incompatibilities
Keep containers tightly closed in a dry, cool and well-ventilated place.

7.3 Specific end use(s)
For research use only.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering Measures
Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protective equipment

Eye/face Protection
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 and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection
Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Recommended Filter type:
Particulates filter conforming to EN 143.
Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance	Form: solid
b) Odor	No data available
c) Odor Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point: 116.7 °C (242.1 °F)
f) Initial boiling point and	No data available

boiling range	
g) Flash point	()No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Density	1.570 g/cm3 at 20 °C (68 °F)
Relative density	No data available
n) Water solubility	468.7 g/l at 20 °C (68 °F) - OECD Test Guideline 105
o) Partition coefficient: n-octanol/water	No data available
p) Autoignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	none

9.2 Other safety information
No data available

SECTION 10 : STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
No data available

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Exposure to moisture may affect product quality.

10.5 Incompatible materials
No information available

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Product Information

Oral LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Dermal LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.

Vapor LC50 Based on ATE data, the classification criteria are not met. ATE > 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Water	-	-	-
Tris (hydroxymethyl) aminomethane	LD50 = 5900 mg/kg (Rat)	LD50 > 5000 mg/kg (Rat)	Not listed
Sodium lauryl sulfate	LD50 = 1288 mg/kg (Rat)	LD50 = 200 mg/kg (Rabbit)	LC50 > 3900 mg/m3 (Rat) 1 h

Toxicologically Synergistic Products

No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation
No information available

Serious eye damage/eye irritation
No information available

Respiratory or skin sensitization
No information available

Carcinogenicity

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Water	7732-18-5	Not listed	Not listed	Not listed	Not listed	Not listed
Glycine,	5704-04-1	Not listed	Not listed	Not listed	Not listed	Not listed

N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-						
Tris (hydroxymethyl) aminomethane	77-86-1	Not listed	Not listed	Not listed	Not listed	Not listed
Sodium lauryl sulfate	151-21-3	Not listed	Not listed	Not listed	Not listed	Not listed

Germ cell mutagenicity
No information available

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

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Sodium lauryl sulfate	EC50: 3.59 - 15.6 mg/L, 96h static (Pseudokirchneriella subcapitata) EC50: = 117 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: 30 - 100 mg/L, 96h (Desmodesmus subspicatus) EC50: = 53 mg/L, 72h (Desmodesmus subspicatus)	1.31 mg/L LC50 96 h 9.9-20.1 mg/L LC50 96 h 4.5 mg/L LC50 96 h 4.62 mg/L LC50 96 h 7.97 mg/L LC50 96 h 10.2-22.5 mg/L LC50 96 h 10.8-16.6 mg/L LC50 96 h 13.5-18.3 mg/L LC50 96 h 15-18.9 mg/L LC50 96 h 22.1-22.8 mg/L LC50 96 h 4.06-5.75 mg/L LC50 96 h 4.2-4.8 mg/L LC50 96 h 4.3-8.5 mg/L LC50 96 h 5.8-7.5 mg/L LC50 96 h 6.2-9.6 mg/L LC50 96 h 8-12.5 mg/L LC50 96 h 4.2 mg/L LC50 96 h	= 0.46 mg/L EC50 Photobacterium phosphoreum 30 min = 0.72 mg/L EC50 Photobacterium phosphoreum 15 min = 1.19 mg/L EC50 Photobacterium phosphoreum 5 min	EC50: = 1.8 mg/L, 48h (Daphnia magna)

12.2 Persistence and degradability
Miscible with water Persistence is unlikely based on information available.

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Sodium lauryl sulfate	1.6

SECTION 13 : DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

SECTION 14 : TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

Further information
Not classified as dangerous in the meaning of transport regulations.

SECTION 15 : REGULATORY INFORMATION

USA Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Water	7732-18-5	X	ACTIVE	-
Glycine, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-	5704-04-1	X	ACTIVE	-
Tris (hydroxymethyl) aminomethane	77-86-1	X	ACTIVE	-
Sodium lauryl sulfate	151-21-3	X	ACTIVE	-

Legend:
TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Chin (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECI
Water	7732-18-5	X	-	231-791-2	X	X		X	X	KE-354
Glycine, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-	5704-04-1	X	-	227-193-6	-	-	X	X	X	-
Tris (hydroxymethyl) aminomethane	77-86-1	X	-	201-064-4	X	X	X	X	X	KE-014
Sodium lauryl sulfate	151-21-3	X	-	205-788-1	X	X	X	X	X	KE-218

CERCLA Reportable Quantity

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

SARA 311/312 Hazards

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

US State Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Water	-	-	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): N

DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

The ingredients of this product are reported in the following inventories:
TSCA : All substances listed as active on the TSCA inventory

TSCA list
No substances are subject to a Significant New Use Rule.
No substances are subject to TSCA 12(b) export notification requirements.

Other International Regulations

Mexico - Grade No Information available

Component	CAS No	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (E 1907/2006) article 59 Candidate List of Substances of Very Hi Concern (SVHC)
Water	7732-18-5	-	-	-
Glycine, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-	5704-04-1	-	-	-
Tris (hydroxymethyl) aminomethane	77-86-1	-	-	-
Sodium lauryl sulfate	151-21-3	-	-	-

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoH
Water	7732-18-5	Listed	Not applicable	Not applicable	Not applicable
Glycine, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-	5704-04-1	Not applicable	Not applicable	Not applicable	Not applicable
Tris (hydroxymethyl) aminomethane	77-86-1	Listed	Not applicable	Not applicable	Not applicable
Sodium lauryl sulfate	151-21-3	Listed	Not applicable	Not applicable	Not applicable

Contains component(s) that meet a 'definition' of per & poly fluoroalkyl substance (PFAS)?
Not applicable

Other International Regulations

Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)

Water	7732-18-5	Not applicable	Not applicable	Not applicable	Not applicabl
Glycine, N-[2-hydroxy-1,1-bis(hydroxymethyl)ethyl]-	5704-04-1	Not applicable	Not applicable	Not applicable	Not applicabl
Tris (hydroxymethyl) aminomethane	77-86-1	Not applicable	Not applicable	Not applicable	Not applicabl
Sodium lauryl sulfate	151-21-3	Not applicable	Not applicable	Not applicable	Not applicabl

SECTION 16: OTHER INFORMATION

Product Use:
For research use only.
Further information
The information is believed to be correct but is not exhaustive and will be used solely as
a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product.

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