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DOCUMENT #: F/RPI/QC 7.7.3-02	PRODUCT NAME: TGS Buffer		RPI ITEM NO: T28020

SECTION 1 - CHEMICAL IDENTIFICATION

PRODUCT NAME: TGS Buffer
 RPI CATALOG #: T28020
 SUPPLIER'S NAME: Research Products International Corp.
 SUPPLIERS ADDRESS: 410 N Business Center Drive Mount Prospect, IL 60056
 EMERGENCY CONTACT: 1-800-424-9300
 OTHER INFORMATION: 847-635-7330

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture **GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

H315	Skin corrosion/irritation	Category 2
H317	Skin Sensitisation	Category 1
H319	Serious eye damage/eye irritation	Category 2
H334	Respiratory Sensitisation	Category 1
H335	Specific target organ toxicity, single exposure; Respiratory tract irritation	Category 3

2.2 GHS Label elements, including Hazard and Precautionary Statement(s) **Pictogram**



Signal word: Danger
Hazard statement(s)

H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Cause Serious Eye irritation
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335	May cause respiratory irritation

Prevention, Response, Storage and Disposal Precautionary Statement(s)

P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash skin thoroughly after handling
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285	In case of inadequate ventilation wear respiratory protection
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

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P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321	Specific treatment (see. on this label).
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362 + P364	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

SECTION 3- COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS Number	Concentration %age
Glycine	56-40-6	< 80.0
Tris (hydroxymethyl) aminomethane	77-86-1	< 20.0
SDS	151-21-3	< 6.0

SECTION 4 - FIRST-AID MEASURES

4.1 Description of first aid measures

General advice: Consult a doctor and show this safety data sheet.

- i. **If inhaled:** Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.
- ii. **In case of skin contact:** Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing and shoes and wash before reuse. Consult a doctor.
- iii. **In case of eye contact:** Flush with copious amounts of water for at least 15 minutes. Consult a doctor.
- iv. **If swallowed:** Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

4.3 Indication of immediate medical attention and special treatment needed: Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

SECTION 5 - FIRE FIGHTING 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: No data available

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5.3 Precautions for fire-fighters: Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

5.4 Further information: No data available

SECTION 6 - ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions: Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up: Cover spillage with suitable absorbent material. Using non-spark tools, sweep up material and place in an appropriate container. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections: For required PPE see section 8. For disposal see section 13.

SECTION 7 - HANDLING AND STORAGE

7.1 Precautions for safe handling: Use in a chemical fume hood, with air supplied by an independent system. Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities: Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. **Short Term Storage:** 2 to 8°C. **Long Term Storage:** -20°C.

7.3 Specific end use(s): Use in a laboratory fume hood where possible. Refer to employer's COSHH risk assessment.

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

- i. **Appropriate engineering controls:** Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

8.3 Personal protective equipment

- i. **Eye/face protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
- ii. **Skin 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
- iii. **Body Protection:** Wear appropriate protective clothing. 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.
- iv. **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 EN149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

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

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Powder	Vapor Pressure	No Data Available
Odor	No Data Available	Vapor Density	No Data Available
Odor Threshold	No Data Available	Relative Density	No Data Available
pH	No Data Available	Water Solubility	No Data Available
Melting / Freezing Point	No Data Available	Partition Coefficient	No Data Available
Initial Boiling Point Range	No Data Available	Auto-Ignition Temperature	No Data Available
Flash Point	No Data Available	Decomposition Temperature	No Data Available
Evaporation Rate	No Data Available	Viscosity	No Data Available
Flammability (Solid, Gas)	No Data Available	Explosive Properties	No Data Available
Upper / Lower Flammability Or Explosive Limits	No Data Available	Oxidizing Properties	No Data Available

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.

Hazardous Decomposition Products/ Hazardous Polymerization: No Data Available.

Incompatibilities: Strong oxidizing agents, Bases.

SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Toxicity

Component	LD50 Oral	LD50 Dermal	LD50 Inhalation
Glycine	7930 mg/kg (Rat)	Not listed	Not listed
Sodium Dodecyl Sulfate	1288 mg/kg (Rat)	580 mg/kg (Rabbit)	3900 mg/m ³ (Rat)-1 h
Tris (hydroxymethyl) aminomethane	5900 mg/kg (Rat)	Not listed	Not listed

SECTION 12 - ECOLOGICAL INFORMATION

Eco Toxicity: The environmental impact of this product has not been fully investigated

Component	Toxicity to fish	Toxicity to Algae

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Sodium Dodecyl Sulfate	LC50 15-18.9 mg/L Pimephales promelas 96 h LC50 4.06-5.75 mg/L Lepomis macrochirus 96 h LC50 4.2-4.8 mg/L Lepomis macrochirus 96 h LC50 6.2-9.6 mg/L Pimephales promelas 96 h LC50= 4.2 mg/L Oncorhynchus mykiss 96 h LC50 13.5-18.3 mg/L Poe cilia reticulate 96 h LC50 5.8-7.5 mg/L Pimephales promelas 96 h LC50 9.9-20.1 mg/L Brachydanio rerio 96 h LC50 10.2-22.5 mg/L Pimephales promelas 96 h LC50 8-12.5 mg/L Pimephales promelas 96 h LC50= 4.5 mg/L Lepomis macrochirus 96 h LC50= 4.62 mg/L Oncorhynchus mykiss 96 h LC50 10.8-16.6 mg/L Poe cilia reticulate 96 h LC50 22.1-22.8 mg/L Pimephales promelas 96 h LC50 4.3-8.5 mg/L Oncorhynchus mykiss 96 h LC50= 1.31 mg/L Cyprinus carpio 96 h LC50= 7.97 mg/L Brachydanio rerio 96 h	EC50 3.59 - 15.6 mg/L 96 h EC50 = 117 mg/L 96 h EC50 = 53 mg/L 72 h EC50 30 - 100 mg/L 96 h
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Mobility

Component	log Pow
Sodium Dodecyl Sulfate	1.6

SECTION 13 - DISPOSAL CONSIDERATIONS

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

SECTION 14 - TRANSPORT INFORMATION

DOT	TDG	IATA	IMDG/IMO
Not regulated	Not regulated	Not regulated	Not regulated

SECTION 15 - REGULATORY INFORMATION

INTERNATIONAL INVENTORIES

INGREDIENT: Glycine							CAS #: 56-40-6		EINECS#: 200-272-2
TSCA	DSL	NDSL	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL

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Listed	Listed	-	-	-	Listed	Listed	Listed	Listed	Listed
INGREDIENT: Tris (hydroxymethyl) aminomethane							CAS #:77-86-1		EINECS#:201-064-4
TSCA	DSL	NDSL	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Listed	Listed	-	-	-	Listed	Listed	Listed	Listed	Listed
INGREDIENT: SDS							CAS #:151-21-3		EINECS#: 205-788-1
TSCA	DSL	NDSL	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Listed	Listed	-	-	-	Listed	Listed	Listed	Listed	Listed

**USA FEDERAL REGULATION
SARA 311/312 HAZARDOUS CATEGORIZATION**

Acute Health Hazard	Chronic Health Hazard	Fire Hazard	Sudden Release Of Pressure Hazard	Reactive Hazard
Yes	No	No	No	No

Clean Water Act/ Clean Air Act:/TSCA 12(b)/ OSHA/ SARA 313: Not Applicable.
California Proposition 65: This product does not contain any Proposition 65 chemicals

HMIS Rating

Health hazard	Chronic Health Hazard	Flammability	Physical Hazard
2		0	0

NFPA Rating

Health hazard	Flammability	Reactivity Hazard
2	0	0

STATE RIGHT TO KNOW

Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
-	Listed	Listed	-	-

US DEPARTMENT OF TRANSPORTATION

REPORTABLE QUANTITY (RQ)	DOT MARINE POLLUTANT	DOT SEVER MARINE POLLUTANT
No	No	No

U.S. DEPARTMENT OF HOMELAND SECURITY: This product does not contain any DHS chemicals.

Canada: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

This SDS complies with the requirements of Regulation (EC).

SECTION 16 - OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Research Products International Corp. shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. This product is sold for laboratory research and development purposes use only.