

**MATERIAL SAFETY DATA SHEET**  
**REQUIRED UNDER SAFETY AND HEALTH REGULATION FOR SHIP REPAIRING**

DATE UPDATED: JANUARY 13, 2015

**SECTION 1. ----- CHEMICAL IDENTIFICATION -----**

**Product Name** TBS Buffer, 10X Powder  
**Product Code(s)** A0025  
**Recommended Use** For Further Manufacturing Use Only  
 Not for Human or Animal Drug Use  
**Recommended Use** used in DNA electrophoresis

**SECTION 2. ----- HAZARDS IDENTIFICATION -----**

**GHS – Classification**

**Classification** Skin Irritant 2 Eye Irritant 2

**Signal Word** Warning



**Hazard Statements** H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation

**Precautionary Statements** P280 - Wear protective gloves/protective clothing/eye protection/face 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  
 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 3. ----- COMPOSITION/INFORMATION ON INGREDIENTS -----**

Chemical Name	EC No.	REACH Reg. No.	CAS-No	Weight %	Classification
Sodium Chloride	EEC No. 231-598-3	Not available	7647-14-5	60-70	-
Tris hydrochloride	EEC No. 214-684-5		1185-53-1	25-35	-
Tris hydroxymethyl aminomethane	EEC No. 201-064-4	Not available	77-86-1	.5-10	Xi;R36/37/38
Potassium Chloride e	EEC No. 231-211-8	Not available	7447-40-7	.5-5	-

**SECTION 4. ----- FIRST-AID MEASURES-----**

<b>Eye Contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
<b>Inhalation</b>	Move to fresh air. If breathing becomes difficult, give oxygen.
<b>Ingestion</b>	Clean mouth with water and afterwards drink plenty of water.
<b>Notes to Physician</b>	Treat symptomatically.

**SECTION 5. ----- FIRE FIGHTING MEASURES -----**

<b>Flammable Properties</b>	Not flammable.
<b>Flash Point</b>	Not determined
<b>Suitable Extinguishing Media</b>	Dry chemical, CO2, water spray or regular foam.
<b>Hazardous Combustion Products</b>	Carbon oxides, Nitrogen oxides (NOx).
<b><u>Explosion Data</u></b>	
<b>Sensitivity to Mechanical Impact</b>	Not sensitive.
<b>Sensitivity to Static Discharge</b>	Not sensitive.
<b>Protective Equipment and Precautions for Firefighters</b>	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-----**

<b>Personal Precautions</b>	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation.
<b>Methods for Containment</b>	Prevent further leakage or spillage if safe to do so.
<b>Methods for Cleaning Up</b>	Avoid dust formation. Pick up and transfer to properly labeled containers. Ventilate area and wash spill site after material pickup is complete.

**SECTION 7. ----- HANDLING AND STORAGE-----**

<b>Handling</b>	Handle in accordance with good industrial hygiene and safety practice. Hygroscopic. Protect from moisture.
<b>Storage</b>	Keep containers tightly closed in a dry, cool and well-ventilated place. Hygroscopic. Protect from moisture.
<b>Incompatible Products</b>	Strong oxidizing agents.

**SECTION 8. - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - -**

**Engineering Measures**                      Showers  
    Eyewash stations  
    Ventilation systems.

**Personal Protective Equipment**

**Eye/Face Protection**                      Tightly fitting safety goggles.  
**Skin and Body Protection**                Wear protective gloves/clothing.  
**Respiratory Protection**                    If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

**Hygiene Measures**                            Handle in accordance with good industrial hygiene and safety practice.

**SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -**

**Appearance**                                    White  
**Odor**    No information available  
**Odor Threshold**                              No information available  
**Decomposition Temperature °C**            No information available  
**Freezing Point**                                No information available  
**Initial Boiling Point**                        No information available  
**Physical State**                                Crystalline Powder  
**pH**    No data available  
**Flash Point**                                    Not determined  
**Autoignition Temperature**                No data available  
**Boiling Point/Range**                        No data available  
**Melting Point/Range**                        No data available  
**Flammability Limits in Air**                **Upper** No data available                      **Lower** No data available  
**Explosive Properties**                        No information available  
**Oxidizing Properties**                        No information available  
**Evaporation Rate**                            No data available  
**MMHG @ 37.8 C**                              No data available  
**Vapor Density**                                No data available  
**Specific Gravity**                              No data available  
**Solubility**                                      No information available  
**Partition Coefficient (n-octanol/water)**    No data available  
**Viscosity**                                      No information available

**SECTION 10. - - - - - STABILITY AND REACTIVITY - - - - -**

**Stability**                                        Stable under recommended storage conditions.  
**Incompatible Products**                      Strong oxidizing agents.  
**Conditions to Avoid**                        Protect from moisture.  
**Hazardous Decomposition Products**      Carbon oxides. Nitrogen oxides (NOx).  
**Hazardous Polymerization**                Hazardous polymerization does not occur.

**SECTION 11. ----- TOXICOLOGICAL INFORMATION -----**

**Acute Toxicity**

**Product Information** Irritating to eye, skin and respiratory system.

<b>Chemical Name</b>	<b>LD50 Oral</b>	<b>LD50 Dermal</b>	<b>LC50 Inhalation</b>
Sodium Chloride	3 g/kg ( Rat )	10 g/kg ( Rabbit )	42 g/m <sup>3</sup> ( Rat ) 1 h
Tris hydroxymethyl aminomethane	5900 mg/kg ( Rat )		
Potassium Chloride	2600 mg/kg ( Rat )		

**Chronic Toxicity**

**Chronic Toxicity** No known effect based on information supplied.

**Target Organ Effects** Heart.

**SECTION 12. ----- ECOLOGICAL INFORMATION -----**

**Ecotoxicity**

The environmental impact of this product has not been fully investigated.

<b>Chemical Name</b>	<b>Toxicity to Algae</b>	<b>Toxicity to Fish</b>	<b>Microtox</b>	<b>Daphnia Magna (Water Flea)</b>
Sodium Chloride		LC50 6020-7070 mg/L Pimephales promelas 96 h LC50 6420-6700 mg/L Pimephales promelas 96 h LC50 4747-7824 mg/L Oncorhynchus mykiss 96 h LC50= 12946 mg/L Lepomis macrochirus 96 h LC50= 7050 mg/L Pimephales promelas 96 h LC50 5560-6080 mg/L Lepomis macrochirus 96 h		
Potassium Chloride	EC50 = 2500 mg/L 72 h	LC50 750-1020 mg/L Pimephales promelas 96 h LC50= 1060 mg/L Lepomis macrochirus 96 h		EC50 = 825 mg/L 48 h

**SECTION 13. ----- DISPOSAL CONSIDERATIONS -----**

**Waste Disposal Method** Dispose of material in accordance with all federal, state, and local regulations

**Contaminated Packaging** Dispose of in accordance with all federal, state and local regulations

**SECTION 14. ----- TRANSPORT INFORMATION -----**

**IATA** Not regulated

**DOT** Not regulated

**SECTION 15. ----- REGULATORY INFORMATION -----**

**REACH Title VII Restrictions**      No information available.

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are to be Indicated on the Label	Pollution Release and Transfer Registry (Class II):	Pollution Release and Transfer Registry (Class I):	Poison and Deleterious Substances Control Law:
Sodium Chloride	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Tris hydroxymethyl aminomethane	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Tris hydrochloride	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Potassium Chloride	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

Component	ISHA - Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA - Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) - Toxic Chemicals	Toxic Release Inventory (TRI) - Group I	Toxic Release Inventory (TRI) - Group II
Sodium Chloride 7647-14-5 ( 60-70 )	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Tris hydroxymethyl Aminomethane 77-86-1 ( .5-10 )	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Tris hydrochloride 1185-53-1 ( 25-35 )	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Potassium Chloride 7447-40-7 ( .5-5 )					

**International Inventories**

TSCA	Complies
EINECS/ELINCS	Complies
ENCS	Complies
IECSC	Complies
KECL	Does not Comply
PICCS	Complies
AICS	Complies

**U.S. Federal Regulations**

**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.

**SARA 311/312 Hazard Categories**

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No

**Reactive Hazard**

No

**Clean Water Act**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)**

This product does not contain any substances regulated as hazardous air pollutants (HAPS) under Section 112 of the Clean Air Act Amendments of 1990.

**CERCLA**

**U.S. State Regulations**

**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

**International Regulations**

**Mexico - Grade**

No information available.

**Canada**

**WHMIS Hazard Class**

D2B Toxic materials



**SECTION 16. ----- OTHER INFORMATION-----**

<b>Issuing Date</b>	09-Feb-2009
<b>Revision Date</b>	13-Jan-2015
<b>Revision Note</b>	No information available.
<b>Recommended Restrictions</b>	No information available

**Disclaimer**

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**End of MSDS**