

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
Product Code(s) A0027
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	10-20	Xi;R36/37/38
Tris hydrochloride	EEC No. 214-684-5	Not available	1185-53-1	1-10	Xi;R36/37/38

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

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
Inhalation	Move to fresh air. If breathing becomes difficult, give oxygen.
Ingestion	Clean mouth with water and afterwards drink plenty of water.
Notes to Physician	Treat symptomatically.

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

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

Personal Precautions	Avoid contact with skin, eyes and clothing. Use personal protective equipment. Ensure adequate ventilation.
Methods for Containment	Prevent further leakage or spillage if safe to do so.
Methods for Cleaning Up	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-----

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

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

Engineering Measures	Showers Eyewash stations Ventilation systems.
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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	Clear	
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	Liquid	
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.
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.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Sodium Chloride	3 g/kg (Rat)	10 g/kg (Rabbit)	42 g/m ³ (Rat) 1 h

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.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Microtox	Daphnia Magna (Water Flea)
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		EC50 = 1000 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 hydrochloride	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 hydrochloride 1185-53-1 (25-35)	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

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-----

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

Disclaimer

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of MSDS