



Material Safety Data Sheet

SECTION 1 – IDENTIFICATION OF THE SUBSTANCE/PREPARATION and of THE COMPANY/UNDERTAKING - CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Identification of the substance or preparation

Trade Name	20X Tris buffered saline	
Catalogue Number:	20-190C	
Chemical Name:	Aqueous solution containing tris (hydroxymethyl) aminomethane hydrochloride and base, and sodium chloride.	
Product Use:	For use in the Nitrotyrosine Assays (Kit 17-376)	
Other trade names and synonyms	20X TBS	
Manufacturer/Distributor :	Millipore Corporation (Corporate Headquarters)	Millipore S.A.S. (European Headquarters)
Postal Address:	290 Concord Road Billerica MA USA	Boite Postale 116 67124 Molsheim Cedex France
Telephone Number:	978-533-2988	33(0)3 90 46 90 00

CHEMTREC Emergency Telephone Number:

International	1-703-527-3887 (collect)
North America	1 800-424-9300
MSDS/SDS Number:	M118050
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Revision:	A

SECTION 2 – COMPOSITION/INFORMATION ON INGREDIENTS

Dangerous Substance/ Hazardous Chemical	EINECS or ELINCS No.	CAS No.	Content (weight percent)	Symbol letters*	R-phrases**
Tris (hydroxymethyl) aminomethane hydrochloride	214-684-5	1185-53-1	14-16%	Xi	R36/37/38
Tris (hydroxymethyl) aminomethane	201-064-4	77-86-1	0.5–1.0%	Xi	R36/37/38
Sodium Chloride	231-598-3	7647-14-5	15-20%	None	None

- This product also contains water that is not a dangerous substance or hazardous chemical as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard (29 CFR 1910.1200).

*Symbol letters and categories of danger: **T+** = Very toxic, **T** = Toxic, **C** = Corrosive, **Xn** = Harmful, **Xi** = Irritant, **E** = Explosive, **O** = Oxidising, **F+** = Extremely flammable, **F** = Very flammable, **N** = Dangerous for the environment

** The full text of the phrase is listed under heading 16.

SECTION 3 - HAZARD IDENTIFICATION**EMERGENCY OVERVIEW**

Appearance:	Colorless liquid
Classification:	This product is not classified according to Directive 1999/45/EC.
Adverse human health effects	
<u>Route of Entry</u>	<u>Potential Health Effects and Symptoms of Exposure</u>
Eyes:	Moderate eye irritant
Ingestion	Moderate gastrointestinal irritant, causing nausea and vomiting.
Inhalation	Moderate respiratory tract and mucous membrane irritant, causing coughing
Short and Long Term Exposure	
Skin:	Moderate skin irritant. Prolonged or repeated contact may cause dermatitis.
Target Organs:	Tris (hydroxymethyl) aminomethane and its hydrochloride – liver, kidneys.
Medical conditions aggravated by exposure:	No known.
Adverse environmental effects:	No information is available.
Adverse physicochemical effects:	None expected.

SECTION 4 - FIRST AID MEASURES

Eyes:	In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. If irritation persists, seek immediate medical attention.
Ingestion:	If swallowed, summon medical assistance, and then wash out mouth with water provided person is conscious. Do not induce vomiting unless directed to do so by a health care provider.
Inhalation:	If inhaled remove victim to fresh air. If not breathing, immediately summon medical assistance and give artificial respiration. If breathing is difficult, give oxygen.
Skin:	In case of contact, immediately wash skin with soap and copious amounts of water. If irritation or redness occurs, seek medical attention

SECTION 5 - FIRE FIGHTING MEASURES

Flash point and method	None; Not considered to be a fire hazard.
Autoignition Temperature	None
Flammability Limits:	Not applicable
Suitable extinguishing media:	Media suitable for the surrounding fire.
Unsuitable extinguishing media:	None reported.
Special protective equipment for fire fighters:	None required
Special exposure hazards:	None expected.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal precautions	Area evacuation is not required. Eliminate unnecessary traffic in area of the spill. Wear chemically resistant boots, clothing and gloves (nitrile, neoprene) to prevent skin contact.
Small Spills:	Clean up spills immediately. Wear appropriate protective clothing. Contain spill and absorb with sand, earth, inert material or vermiculite. Collect residues and place in labeled plastic containers. Avoid contact with skin and eyes.
Large Spills:	In addition to Small Spill precautions, clear area of all unnecessary personnel.
Environmental precautions	May be discharged into sewer, or industrial waste water systems.
Clean up measures:	Small spills may be adsorbed on paper towels, and stored in closed containers pending final disposition. Larger spill may be absorbed in sand, sawdust or vermiculite, and stored in closed containers pending final disposition (See section 13). Wash spill area with detergent and water to remove residual contamination. This water may be disposed to the sanitary sewer.

SECTION 7- HANDLING AND STORAGE

Handling:

- Avoid contact with eyes and skin. Wear gloves.
- Do not inhale aerosols.
- May be harmful if swallowed.
- Use personal protective equipment outlined in section 8.
- Wash thoroughly after handling
- Use with adequate ventilation

Storage

- Store at room temperature, unless directed otherwise by the product data sheet.

SECTION 8 - EXPOSURE CONTROL AND PERSONAL PROTECTION

Specific Protection	Normal Handling Conditions	Emergency Response Conditions
Respiratory protection	Not normally required for normal use.	If aerosols are present - air purifying respirator with mist cartridges
Ventilation	General room ventilation	If aerosols are present, provide exhaust ventilation
Eye protection	Safety glasses with side shields	Chemical splash goggles.
Skin protection	Nitrile gloves and laboratory coat.	Chemically resistant jacket, pants, gloves, boots and head covering

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colorless liquid
Odour:	None
Odour threshold:	No data have been found
pH (product):	7-8
Melting point:	-5 to -8°C
Boiling point:	103 to 107°C
Flash point:	None; Not considered to be a fire hazard.
Explosive properties:	Not considered to be an explosion hazard.
Oxidising properties:	Not considered to have oxidising properties.
Vapor pressure, 20 °C:	<1 mm Hg
Specific Gravity (Water = 1.0):	1.07 – 1.17
Water solubility 20 °C:	Miscible with water
Vapor Density	Essentially that of water
Viscosity	Not available
Partition coefficient: n-octanol/water	Not available

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures
Conditions to avoid	Elevated temperature, heating to dryness.
Incompatible with:	Strong oxidizing agents.
Hazardous Decomposition Products:	Oxides of carbon and nitrogen, hydrogen chloride.
Hazardous Polymerization	Will not occur

SECTION 11 - TOXICOLOGICAL INFORMATION

Dangerous to health effects and symptoms relating to:

Inhalation:	Will cause respiratory tract and mucous membrane irritation with coughing.
Ingestion:	Will cause gastrointestinal irritation with nausea and vomiting.
Skin contact:	Will cause skin irritation. Prolonged or repeated contact may cause dermatitis.
Eye contact:	Will cause eye irritation.
Carcinogenicity:	None of the components of these products are listed as carcinogenic by ACGIH, IARC, NTP, OSHA or California proposition 65.
Chronic toxicity	Dermatitis, kidney and liver damage.

Section 11 Toxicological Information (continued)

Toxicology Data

Selected RTECS data for components

Compound: Tris (hydroxymethyl) aminomethane (100%)	RTECS#: TY2900000
LD ₅₀ , oral, rat:	5,900 mg/kg
Compound: Sodium chloride (100%)	RTECS#: VZ4725000
LD ₅₀ , oral, rat:	3,000 mg/kg
LD ₅₀ , oral, mouse:	4,000 mg/kg
LC ₅₀ , inhalation, rat:	>42 g/m ³ /1H
Draize test, rabbit, eye	100 mg/24H Moderate;
Draize test, rabbit, skin:	500 mg/24H Moderate;

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: Sodium chloride

LC₅₀ *Lepomis macrochirus* (fresh water fish) 9,675 mg product/liter test water (96 H, flow through)

Environmental Fate: It is expected that this product will not biodegrade in contact with soils and natural waters.

SECTION 13- DISPOSAL INFORMATION

This product may be disposed to an industrial sewer system.

European Community:

When disposal is required, this product be considered according to the European Waste catalogue (European commission decision of 03/05/01 modifying directives 94/3/CE and 75/442/CE) as part of the following category:

16 10 02 aqueous liquid wastes other than those mentioned in 16 10 01

United States:

This product does not meet the definition of a US Environmental Protection Agency RCRA hazardous waste. Unused product should be disposed of in a manner consistent with federal, state and local regulations.

SECTION 14 - TRANSPORTATION INFORMATION

The transportation of this product is not regulated by IMDG (sea), ADR (road), RID (rail), ICAO/IATA (air), or USDOT as a dangerous goods or hazardous material.

SECTION 15 – REGULATORY INFORMATION*Canada:*

This product has a WHMIS classification of Not Classified.

European Community

Label health, safety and environmental information (Directives: 67/548/EEC and 1999/45/EC)

Symbols:	None
Category of danger	None
Risk phrases:	None
Safety Phrases	S1/2 Keep locked up and out of the reach of children. S28 After contact with skin, wash immediately with plenty of water S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Japan:

None of the components of this product are listed by the Poisonous and Deleterious Substances Control Law

United States

Toxic Substances Control Act: All of components of this product are listed on the EPA Toxic Substances Control Act (TSCA) Inventory.

Occupational Exposure Limits

Tris (hydroxymethyl) aminomethane and its hydrochloride	None established
Sodium chloride	None established

SECTION 16- ADDITIONAL INFORMATION

Risk phrases referred to under Section 2:

R36/37/38 Irritating to eyes, respiratory system and skin

Abbreviations used:

ACGIH	American Conference of Government Industrial Hygienists
ADR	European agreement on the international carriage of dangerous goods on road
C	Ceiling exposure value
CAS	Chemical Abstract Service
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EPA	United States Environmental Protection Agency
IARC	International Agency for Research in Cancer.
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	Regulations regarding the transportation of dangerous goods on ocean-going vessels issued by the International Maritime Organization.
IUCLID	International Uniform Chemical Information Database
LC ₅₀	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LD ₅₀	Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population.
MAK	Maximum Concentration Values in the Workplace (Austria, Germany, Switzerland)
NIOSH	National Institute of Occupational Health & Safety (US)
OSHA	United States Occupational Safety and Health Administration
REL	Recommended exposure limit (NIOSH)
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
STEL	Short term exposure limit (15 minute)
TGV	15 minute short term exposure limit (Sweden)
TLV	Threshold Limit Value
VLE	15 minute short term exposure limit (France)
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet is compliant with the requirements of EC Directive 2001/58/EC and ANSI Z400.1-1998.

The physical, chemical and toxicological properties of this product have not been thoroughly investigated.

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