



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	Blocking Buffer, 10X	
Catalogue Number:	20-316, 17-376, 20316, 17376	
Chemical Name:	An aqueous solution containing chicken egg albumin, tris (hydroxymethyl) aminomethane hydrochloride, Kathon® CG/ICP, and sodium chloride.	
Product Use:	For use in the Nitrotyrosine Assays (Kit 17-376)	
Other trade names and synonyms	None	
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:	M118055
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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	7-8%	Xi	R36/37/38
Kathon CG/ICP***	Mixture	Mixture	0.3-0.4%	C	R34 R43

***Kathon CG/ICP is aqueous solution of 5-chloro-2-methyl-4-isothiazolin-3-one (1.15%), 2-methyl-4-isothiazolin-3-one (0.35%), copper nitrate trihydrate (0.16%) and magnesium salts (chloride and nitrate) (23.00%).

*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.

- These products also contain albumin, sodium chloride and water that are not dangerous substances or hazardous chemicals as defined in European Community Directives 67/548/EEC or 1999/45/EC, and Hazard Communication Standard (29 CFR 1910.1200).

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

Route of EntryPotential Health Effects and Symptoms of Exposure

Eyes:

Possible eye irritant accompanied by burning.

Ingestion

Possible gastrointestinal irritant causing nausea and vomiting.

Inhalation

Short and Long Term Exposure

Possible respiratory tract and mucous membrane irritant, causing coughing. Inhalation of aerosol containing Kathon CG/ICP may be destructive to mucous membranes and the upper respiratory tract.

Skin:

Possible skin irritant. Prolonged or repeated contact may cause dermatitis. Kathon CG/ICP may cause allergic skin reactions.

Target Organs:

Tris (hydroxymethyl) aminomethane hydrochloride – liver, kidneys.

Copper nitrate – blood, kidneys.

Magnesium chloride – central nervous system, kidney, gastrointestinal tract

Magnesium nitrate – blood, central nervous system.

Medical conditions aggravated by exposure:

Anaphylactic allergic reactions to albumin and/or the components of Kathon CG/ICP in sensitized individuals.

Adverse environmental effects:

Products containing Kathon CG/ICP are expected to be highly toxic to aquatic organisms. See section 12.

Adverse physicochemical effects:

None expected.

SECTION 4 - FIRST AID MEASURES

Eyes:	In case of contact with eyes, seek immediate medical attention, and flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.
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	Greater than 200°C; Not considered to be a fire hazard.	
Autoignition Temperature	Not available	
Flammability Limits:	Lower explosive limit	Upper explosive limit
	Not available	Not available
Suitable extinguishing media:	Water spray, carbon dioxide, dry chemical powder or foam.	
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, since components of this product may be absorbed through the skin.
Small Spills:	Clean up spills immediately. Wear appropriate protective clothing and if necessary breathing apparatus. Contain spill and absorb with sand, earth, inert material or vermiculite. Collect residues and place in labeled plastic containers. Avoid breathing vapors and contact with skin and eyes.
Large Spills:	In addition to Small Spill precautions, clear area of all unnecessary personnel and move upwind, if aerosol formation is possible..
Environmental precautions	May be discharged into sewer, or industrial waste water systems if allowed by local regulations. Otherwise, collect and dispose according to federal, state and local regulations.
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 or vapors.
- May be harmful if swallowed.
- Use personal protective equipment outlined in section 8.
- Wash thoroughly after handling
- Use with adequate ventilation

Storage

- Store frozen at -20°C, unless directed otherwise by the product data sheet. Avoid repeated freeze/thaw cycles.

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 organic 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):	7.0 – 8.0
Melting point:	-5 to -10°C
Boiling point:	110 to 115°C
Flash point:	>200°C 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):	1.05 – 1.15
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, contact with incompatible materials.
Incompatible with:	Strong oxidizing agents, strong reducing agents.
Hazardous Decomposition Products:	Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, hydrogen chloride gas.
Hazardous Polymerization	Will not occur.

SECTION 11 - TOXICOLOGICAL INFORMATION

Dangerous to health effects and symptoms relating to:

- Inhalation: May cause respiratory tract and mucous membrane irritation with coughing. Inhalation of aerosol containing Kathon CG/ICP may be destructive to mucous membranes and the upper respiratory tract.
- Ingestion: May cause gastrointestinal irritation with nausea and vomiting.
- Skin contact: May cause skin irritation accompanied by burning.
- Eye contact: May cause eye irritation. Prolonged or repeated contact may cause dermatitis. Kathon CG/ICP may cause allergic skin reactions.
- 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, central nervous system and blood damage.

Toxicology Data

Selected RTECS data for components

Compound: **Tris (hydroxymethyl) aminomethane hydrochloride** (100%) RTECS: **not listed**

No RTECS or IUCLID toxicological data were found for this substance.

Parent compound RTECS#: **TY2900000**

Compound: **Tris (hydroxymethyl) aminomethane** (100%)

LD₅₀, oral, rat: 5,900 mg/kg

Compound: **5-chloro-2-methyl-4-Isothiazolin-3-one** CAS# 26172-55-4 RTECS#: **NX8156850**

No applicable data were found for this compound. This compound has been investigated as a mutagen.

Compound: **2-methyl-4-isothiazolin-3-one** CAS# 2682-20-4 RTECS#: **NX8157080**

No applicable data were found for this compound.

Compound: **Copper nitrate trihydrate** CAS# 10031-43-3 RTECS#: **GL7875000**

LD₅₀, oral, rat: 940 mg/kg

Compound: **Magnesium nitrate hexahydrate** CAS# 13446-18-9 RTECS#: **OM3756000**

LD₅₀, oral, rat: 5,440 mg/kg

Standard Draize test, rabbit, eye, 500 mg/24H Mild

Standard Draize test, rabbit, skin, 500 mg/24H Mild

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity: - calculated for a 0.4% by weight aqueous Kathon CG/ICP solution. Assume no synergistic or antagonistic effects from the other ingredients.

LC₅₀ *Onchorhynchus mykiss* (Rainbow trout) Approximately 50 ml product/l test water (96 H)

EC₅₀ *Daphnia magna* (Daphnia) Approximately 40 ml product/l test water (48 H)

Environmental Fate: It is expected that these products will not be rapidly biodegrade in contact with soils and natural waters.

SECTION 13- DISPOSAL INFORMATION

This product should not 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:

18 01 06* chemicals consisting of or containing dangerous substances

United States:

Theses products do 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 these products 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:

These products have WHMIS classifications 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	S26	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
	S36/37/39	Wear suitable protective clothing, gloves and eye/face protection
	S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Japan:

Copper Nitrate is listed as a Deleterious Substance by the Poisonous and Deleterious Substances Control Law

United States

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

Section 15 (continued)

Occupational Exposure Limits

*Copper Nitrate trihydrate*NIOSH REL – 1 mg/m³ TWA*Other components*

None established

SECTION 16- ADDITIONAL INFORMATION

Risk phrases referred to under Section 2:

R34	Causes burns
R36/37/38	Irritating to eyes, respiratory system and skin
R43	May cause sensitisation by skin contact

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 these products have not been thoroughly investigated.

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