



Material Safety Data Sheet

MSDS/SDS Number: 00000008MSDS
Latest Revision Date: July 2, 2009
Revision: A

SECTION 1 IDENTIFICATION OF THE SUBSTANCE OR PREPARATION AND OF THE COMPANY/UNDERTAKING

Product Name: 10X Staining Solution A
Catalogue Number(s): 2004756; Component of KAA002
Chemical Name: Aqueous solution of Potassium hexacyanoferrate (III), (Red prussiate), and Potassium hexacyanoferrate (II) trihydrate (Yellow prussiate).
Synonyms: None
Intended Product Use: Cellular Research
Manufacturer/Distributor: Millipore Corporation (Corporate Headquarters) Millipore S.A.S. (European Headquarters)
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SECTION 2 HAZARDS IDENTIFICATION

GHS Hazard Class: Skin Irritant: Category 3 (Mild Irritant)
Eye Irritant: Category 2B
Signal Word and Hazard Statement: Warning: Causes mild skin irritation
Warning: Causes eye irritation

EU Hazard Symbol Pictogram:



Xi (R36/38)

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Identification of Dangerous Components: This product contains the substances listed below, which are defined as 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.

Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters*†	R Phrases** †
Potassium Hexacyanoferrate (III) (Red Prussiate):	237-323-3	13746-66-2	< 1 %	N/A	N/A
Potassium Hexacyanoferrate (II) Trihydrate (Yellow Prussiate):	Not Listed	14459-95-1	< 1 %	N/A	N/A

Identification of Components Not Classified as Dangerous:

This product contains the substances listed below, which are not defined as 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.

Non-Dangerous Component	EINECS or ELINCS No.	CAS No.	Content (weight percent)	EU Hazard Symbol Letters *†	R Phrases** †
Water:	231-791-2	7732-18-5	< 98 %	N/A	N/A

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

** The full text of each R phrase is listed in Section 2.

† Symbols letters and R Phrases are assigned to each dangerous component for the highest concentration range as defined in 67/548/EEC and 1999/45/EC.

SECTION 4 FIRST AID MEASURES

	Treatment Measures:	Symptoms of Exposure:
Contact with Eyes:	If the product contacts the eyes, promptly wash (irrigate) the eyes with large amounts of tepid water for at least 15 minutes, occasionally lifting the lower and upper lids. Seek medical attention immediately.	Possible eye irritation
Ingestion:	Seek medical attention immediately. Never give an unconscious person anything by mouth.	Possible gastrointestinal irritation causing nausea and vomiting.
Inhalation:	If a person inhales large amounts of the product move the exposed person to fresh air at once. If breathing is difficult or stops seek immediate medical attention.	Possible respiratory tract and mucous membrane irritation.
Skin Contact:	If the product contacts the skin, immediately flush the contaminated skin with mild soap and water. If this chemical penetrates clothing immediately remove the clothing and flush the skin with water. Seek medical attention immediately.	Possible skin irritation.

SECTION 5 FIRE FIGHTING MEASURES

- Suitable Extinguishing Media:** Use extinguishing media appropriate for the surrounding fire. This product is compatible with commercially available extinguishing media.
- Special Exposure Hazards:** Hazardous decomposition products that form when the substance or mixture burns
- Special Protective Equipment for Firefighters:** This product does not require the use of any additional fire fighting equipment beyond what is appropriate to the surrounding fire.

SECTION 6 ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Wear chemical resistant boots, clothing, eye protection, and gloves to prevent skin contact. (See Section 8)
- Small Spills:** Identify the spilled material(s). Barricade the spill area and notify others in the surrounding areas. Control all sources of ignition if the substance is flammable. Don the appropriate personal protective equipment (See section 8). Control the movement of the spilled product (into drains, soil, across floors etc.) with absorbent spill materials. Collect contaminated spill material and place in container meeting appropriate U.N. packaging requirements. Decontaminate used equipment and affected spill area appropriately.
- Large Spills:** In addition to small spill precautions, determine personnel evacuation distances. Notify appropriate authorities if necessary.
- Environmental Precautions:** Collect and dispose of contaminated materials according to international, federal, state and local regulations. Keep away from surface and ground water, drains, and soil.

SECTION 7 HANDLING AND STORAGE

- Handling:** Seek appropriate training to safely handle this product under normal conditions. Use the recommended personal protective equipment (See Section 8) to prevent chemical exposures. Wash hands with soap and water before eating, drinking, or touching common items (phone, computer, etc.) to prevent cross contamination. Use this product with adequate ventilation. See product technical data sheet for details.
- Storage:** See product technical data sheet for details.
- Specific use:** See product technical data sheet for details.

SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

Exposure Limit Values:	OSHA PEL	NIOSH REL	ACGIH TLV	Other
Potassium Hexacyanoferrate (III) (Red Prussiate):	Not Listed	Not Listed	TWA 5 mg(CN)/m ³ (skin)	See Below
Australia:	TWA 0.1 mg(Fe)/m ³ , JUL2008, TWA 5 mg(CN)/m ³ , JUL2008			
Belgium:	TWA 1 mg(Fe)/m ³ , MAR2002			
Denmark:	CL 5 mg(CN)/m ³ , OCT 2002			
Germany:	MAK 2 mg(CN)/m ³ (Inhalable), 2005			
Hungry:	TWA 5 mg(CN)/m ³ , STEL 20 mg(CN)/m ³ , Skin			

Mexico:	TWA 5 mg(CN)/m ³ , 2004			
Russia:	STEL 4 mg/m ³ , JUN2003			
United Kingdom:	TWA 5 mg(CN)/m ³ (Skin), 2005			
Potassium Hexacyanoferrate (II) Trihydrate (Yellow Prussiate):	Not Listed	Not Listed	TWA 5 mg(CN)/m ³ (Skin)	See Below
Australia:	TWA 0.1 mg(Fe)/m ³ , JUL2008, TWA 5 mg(CN)/m ³ , JUL2008			
Belgium:	1 mg(Fe)/m ³ , MAR2002			
Denmark:	CL 5 mg(CN)/m ³ , OCT 2002			
Germany:	MAK 2 mg(CN)/m ³ (Inhalable), 2005			
Hungary:	TWA 5 mg(CN)/m ³ , STEL 20 mg(CN)/m ³ , Skin, SEP2000			
Mexico:	TWA 5 mg(CN)/m ³ , 2004			
Russia:	STEL 4 mg/m ³ , JUN2003			
United Kingdom:	TWA 5 mg(CN)/m ³ (skin), 2005			

	Normal Handling Conditions	Emergency Response Conditions
Engineering Controls:	General room ventilation is adequate for the use of this product.	Provide negative pressure ventilation.
Respiratory Protection	Use appropriate respiratory protection.	Use appropriate respiratory protection.
Eye Protection:	Safety glasses with side shields.	Chemical splash goggles or other face protection as appropriate.
Skin Protection:	Laboratory coat, adequate chemical-resistant gloves.	Chemically resistant boots, clothes, and impermeable gloves as appropriate.
Environmental Exposure Controls:	Not available.	Not available.
Other Equipment:	Safety shower, eyewash stations, and hand washing equipment should be available close to the work area as needed.	

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Red
Odor:	Not Available
Odor Threshold:	Not Available
pH:	8.0 - 10.0
Melting Point/Freezing point:	70 °C
Initial boiling point and boiling range:	Not Available
Flash Point:	Not Available
Evaporation Rate, 20 °C:	Not Available

Flammability (Solid/Gas):	Not Available	
Explosive Limits:	UEL: Not Available	LEL: Not Available
Vapor Pressure:	Not Available	
Vapor Density, 20 °C:	Not Available	
Relative Density (Water = 1.0):	1.85 g/cm ³	
Solubility:	Complete @ 20°C	
Partition coefficient (n-octanol/water):	Not Available	
Auto Ignition Temperature (ASTM D1929):	Not Available	
Decomposition temperature:	Not Available	
Oxidizing Properties:	Not Available	
Viscosity, centipoise:	Not Available	

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability:	Product is stable under normal operating conditions and use as described in the product technical data sheet.
Conditions to Avoid:	See product technical data sheet for details.
Incompatible Materials to Avoid:	Strong acids, strong oxidizing agents, ammonia, hydrochloric acid, cyanides, and extreme temperatures.
Hazardous Decomposition Products:	Carbon oxides, nitrogen oxides (NOx), Hydrogen cyanide (hydrocyanic acid)

SECTION 11 TOXICOLOGICAL INFORMATION

Toxicology Data: Toxicological information for this product as a whole does not exist, below is data for the individual components.

Potassium Hexacyanoferrate (III) (Red Prussiate): RTECS # LJ8225000

Potassium Hexacyanoferrate (II) Trihydrate (Yellow Prussiate): LJ8219000

	Toxicity Test	Exposure Route	Dose	Observed Effect
Potassium Hexacyanoferrate (III) (Red Prussiate):	LD ₅₀ (Mouse)	Oral	2,970 mg/kg	Not Available ¹
	LD _{Lo} (Rat)	Oral	1,600 mg/kg	Not Available ¹
	LC _{Lo} (Rat)	Inhalation	0.51mg/m ³ /24 hour/26 week-	Kidney, Ureter, and Bladder: Other changes

			continuous	in urine composition Blood: Changes in erythrocyte (RBC) count Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: Catalases ¹
Potassium Hexacyanoferrate (II) Trihydrate (Yellow Prussiate):	LD ₅₀ (Rat)	Oral	6,400 mg/kg	N/A ²
	LD ₅₀ (Mouse)	Oral	5,000 mg/kg	N/A
Skin Corrosion/Irritation:	Not Available			
Serious Eye Damage/Eye Irritation:	Not Available			
Respiratory or Skin Sensitization:	Not Available			
Germ Cell Mutagenicity:	Not Available			
Reproductive Toxicity:	Not Available			
STOST-Single Exposure:	Not Available			
STOST-Repeated Exposure:	Not Available			
Aspiration Hazard:	Not Available			
Carcinogenicity:	Carcinogenetic information for this product as a whole does not exist, below is data for the individual components.			
Research Agency:	OSHA:	NTP:	IARC:	
Potassium Hexacyanoferrate (III) (Red Prussiate):	Not Listed	Not Listed	Not Listed	
Potassium Hexacyanoferrate (II) Trihydrate (Yellow Prussiate):	Not Listed	Not Listed	Not Listed	

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity:	Ecotoxicity information for this product as a whole does not exist.
Mobility:	Not Available
Persistence and Degradation:	Not Available
Bio Accumulative Potential:	Not Available
Results of PBT Assessment:	Not Available
Other adverse effects:	None

SECTION 13 DISPOSAL INFORMATION

Substance: Dispose of unused contents in accordance with international, federal, state, and local regulations.

Contaminated Packaging: Dispose of container in accordance with international, federal, state and local requirements.

SECTION 14 TRANSPORTATION INFORMATION

UN Number: Not Listed

Class: Not Listed

Proper Shipping Name: Not Listed

Packing Group: Not Listed

Marine Pollutant: Not Listed

Other Applicable Information: None

SECTION 15 REGULATORY INFORMATION

Australia: Hazchem Code: Not Listed

Poisons Schedule Number: Not Listed

California: Proposition 65 Listed: Not Listed

Canada: WHMIS: D2B

European Union: REACH: Chemical Safety Assessment for the substance or substances in the preparation not required.

Substances of Very High Concern (SVHC) - October 28th, 2008: This product does not contain SVHC's in concentrations above 0.1% weight/weight.

Category of danger: Xi: Irritant

Risk phrases: R32: Contact with acids liberates very toxic gas.

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

R36/38: Irritating to eyes and skin.

Safety phrases: S7/9: Keep container tightly closed and in a well-ventilated place.
S20/21: When using do not eat, drink or smoke.
S22: Do not breathe dust.
S23: Do not breathe gas/fumes/vapour/spray
S24/25: Avoid contact with skin
S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S27/28: After contact with skin, take off immediately all contaminated clothing, and wash immediately with plenty of soap and tepid water.
S29/35: Do not empty into drains; dispose of this material and its container in a safe way.
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

OECD/High Production Volume (HPV) chemicals: Not Listed

RoHS: This product does not contain RoHS listed substances in concentrations above the established thresholds.

Japan: Poisonous and Deleterious Substances Control Law: Not Listed

United Kingdom Control of Substances Hazardous to Health Regulations 2002 (COSHH) Rating: Not Listed

SECTION 16 ADDITIONAL INFORMATION

Training Advice: Seek effective chemical handling training to reduce the hazards associated with this product prior to use.

Technical Contact: <http://www.millipore.com/support>

Abbreviations Used

ACGIH	American Conference of Government Industrial Hygienists
ADR	European agreement on the international carriage of dangerous goods on road
CAS	Chemical Abstract Service
EC ₅₀	Half Maximum Effective Concentration
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.
LC ₅₀	Lethal Concentration 50% is the concentration of a chemical which kills 50% of a sample population
LC _{L0}	Lowest observed lethal dose (air)
LD ₅₀	Lethal Dose 50% is the dose of a chemical which kills 50% of a sample population.
LD _{L0}	Lowest observed lethal dose
LEL	Lower Explosive Limit
MSFU	Manufacture, Formulation, Supply and Use (Section 13)
NIOSH	National Institute of Occupational Safety and Health (US)
NTP	National Toxicology Program (US)
OSHA	United States Occupational Safety and Health Administration
RID	International regulations concerning the international carriage of dangerous goods by rail.
RTECS	Registry of Toxic Effects of Chemical Substances (US)
STOST	Specific Target Organ Systemic Toxicity
UEL	Upper Explosive Limit

WHMIS Workplace Hazardous Materials Information System (Canada)

This safety data sheet has been prepared to comply with the requirements of the European Union regulation on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) 1906/2006 and ANSI standard Z400.1-1998.

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¹ Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) File # LJ8225000, 2007.

² Centers for Disease Control and Prevention, 1600 Clifton Rd, Atlanta, GA 30333, USA, National Institute for Occupational Health and Safety (NIOSH), Registry of Toxic Effects of Chemical Substances (RTECS) File # LJ8219000, 2007.