



Material Safety Data Sheet

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SECTION 1 PRODUCT AND COMPANY INFORMATION

Trade Name: Autofluorescence Eliminator Reagent
Catalogue Number(s): 2160
Chemical Name: An aqueous solution of denatured ethanol with Autofluorescence eliminator compound.
Product use: Biological research reagent.
Other trade names and synonyms: None
Manufacturer/Distributor: Millipore Corporation (Corporate Headquarters) Millipore S.A.S. (European Headquarters)
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SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

Component	EINECS or ELINCS No.	CAS No.	Content (volume percent)	Symbol letters*	R Phrases**
Ethanol	200-578-6	64-17-5	60-65%	F	R11
Methanol	200-659-6	67-56-1	3-4%	F	R11
				T	R23/24/25 R39/23/24/25
2-Propanol	200-661-7	67-63-0	3-4%	F	R11
				Xi	R36 R67
Water	231-791-2	7732-18-5	30%	None	None

This product also contains a proprietary anti-autofluorescence compound at less than 1%.

* 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 phrase is listed in Section 16.

SECTION 3 HAZARD IDENTIFICATION / EMERGENCY OVERVIEW

Appearance: Colorless liquid

Classification: This product is classified as a flammable, **F** and harmful, **Xn** according to Directive 1999/45/EC.

Adverse human health effects:

Contact with Eyes: Severe Eye irritant. Symptoms may include sensitization to light, chemical conjunctivitis and corneal damage.

Ingestion: Possible gastrointestinal tract irritant. Will cause nausea, vomiting and diarrhea. Possible symptoms include nausea, vomiting, diarrhea, acidosis, and central nervous system depression. These symptoms may be followed by excitement, headache, dizziness, and drowsiness. Ingestion of significant amount of this product may cause collapse, unconsciousness, coma and possible death.

Inhalation (Short Term): Central Nervous System effector. Symptoms of overexposure include nausea, headache, dizziness, unconsciousness and coma.

Inhalation (Long Term): Repeated or prolonged inhalation of ethanol vapors may cause liver, kidney, and heart damage.

Skin Contact: Moderate skin irritant. This product may be absorbed through the skin, and may cause cyanosis of the extremities

Target Organs: Kidneys, heart, central nervous system, liver.

Medical conditions aggravated by exposure: Persons with pre-existing eye or skin disorders or impaired liver or kidney function may have their conditions aggravated by exposure to this product.

Adverse environmental effects: This product will be slightly toxic to aquatic organisms in large concentrations, but is expected to rapidly biodegrade in contact with soils and natural waters. See Section 12.

Adverse physiochemical effects: Flammable liquid and vapors. Vapors form explosive mixtures with air. See Section 5.

SECTION 4 FIRST AID MEASURES

Contact with Eyes: Seek immediate medical attention. Flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.

Ingestion: If swallowed, immediately summon medical assistance. Do not induce vomiting unless directed to do so by a health care provider. If victim is conscious, give milk or water.

Inhalation: If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Skin Contact: In case of contact, immediately wash skin with soap and copious amounts of water. If irritation or redness occurs, seek medical attention. Launder clothing before reusing.

SECTION 5 FIRE FIGHTING MEASURES

Flash Ignition Temperature:	16-20°C
Autoignition Temperature (ASTM D1929):	363°C
Flammability Limits:	Lower explosive limit: 3.3 Upper explosive limit: 19%
Suitable extinguishing media:	Dry chemical, carbon dioxide, water spray or alcohol-resistant foam.
Unsuitable extinguishing media:	Water stream may be ineffective.
Special protective equipment for firefighters:	Large quantities of ethanol vapors will form explosive mixture with air. Ethanol vapors may travel along surfaces to sources of ignition and flash back to the product pool. Ethanol may burn with a colorless, barely visible flame.
Special exposure hazards:	Approach first from upwind direction to avoid toxic combustion products. Wear full protective gear and wear a self-contained breathing apparatus in pressure-demand mode.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions:	
Small spills:	Area evacuation is not required; allow access only to trained clean up personnel. Clean up spills immediately. Wear appropriate protective clothing and if necessary breathing apparatus.
Large spills:	Area evacuation is required; avoid energizing or de-energizing potential sources of ignition. Summon the fire brigade and prevent entry of any others to the area.
Environmental precautions:	Spilled ethanol solutions may be washed to sewer, or industrial waste water systems only if permitted by local authorities having jurisdiction. 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. Large spill cleanup should be attempted only by trained personnel having experience with potentially explosive environments. Spill debris should be 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. Avoid presence of ignition sources.

Storage: Store at 2-8°C, unless directed otherwise by the product data sheet.

SECTION 8 EXPOSURE CONTROL AND PERSONAL PROTECTION

	Normal Handling Conditions	Emergency Response Conditions
Respiratory protection:	Not normally required for normal use.	If aerosols or vapors are present - air purifying respirator with cartridges specific for organic vapors.
Ventilation:	General room ventilation	If aerosols or vapors 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

Odor: Sharp, characteristic wine-like odor.

Odor Threshold: 49 to 716 ppm

pH: Not applicable

Melting Point: -113°C

Boiling Point: 75-80°C

Flash Ignition Point: 16-20°C

Explosive Properties: Ethanol may form explosive mixtures with air when heated above its flash point.

Oxidizing Properties: Not considered to have oxidising properties.

Vapor pressure, 20 °C: Approximately 45 mm Hg

**Specific Gravity
(Water = 1.0):** 0.86-0.88

Solubility: Miscible with water

Vapor Density, 20 °C: Ethanol: 1.6

Viscosity, centipoise, 20°C: 2.4 – 2.6

**Partition coefficient
(n-octanol/water):** Ethanol: 0.49

SECTION 10 STABILITY AND REACTIVITY

- Chemical Stability:** Stable under normal temperatures and pressures.
- Conditions to Avoid:** Elevated temperatures, incompatible materials.
- Incompatible With:** Strong oxidizing agents, strong acids, reactive metals.
- Hazardous Decomposition Products:** Oxides of carbon.
- Hazardous Polymerization:** Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

- Inhalation:** Central Nervous System effects include nausea, headache, dizziness, unconsciousness and coma.
- Ingestion:** May cause gastrointestinal tract irritation. Will cause nausea, vomiting and diarrhea. Possible symptoms include nausea, vomiting, diarrhea, acidosis, and central nervous system depression. These symptoms may be followed by excitement, headache, dizziness, and drowsiness. Ingestion of significant amount of this product may cause collapse, unconsciousness, coma and possible death.
- Skin Contact:** Causes moderate skin irritant. This product may be absorbed through the skin, and may cause cyanosis of the extremities
- Eye Contact:** Causes severe eye irritation. Symptoms may include sensitization to light, chemical conjunctivitis and corneal damage.
- Carcinogenicity:** None of the constituents of this product are listed as carcinogenic by ACGIH, IARC, NTP, OSHA, or the State of California.
- Chronic Toxicity:** Prolonged or repeated exposure to ethanol may cause heart, liver and kidney damage, and reproductive and fetal effects. Studies in laboratory animals have indicated the development of tumors, and laboratory experiments have shown mutagenic effects. Animal studies have reported the development of tumors.

Section 11 – Toxicological Information (continued)

Toxicology Data: Toxicological information for this product as a whole does not exist;
Selected data for the individual components:

Ethanol (100%)	RTECS#: KQ6300000
LD ₅₀ , oral, mouse:	3,450 mg/kg
LC ₅₀ , inhalation, mouse/4H:	39 gm/m ³
Draize test, rabbit, skin 20 mg/24H:	Moderate
Draize test, rabbit, eye 500 mg	Severe

Ethanol has been investigated as a tumorigen, mutagen, reproductive effector, and primary human irritant.

Methanol (100%)	RTECS#: PC1400000
LD ₅₀ , oral, mouse	7,300 mg/kg
LC ₅₀ , inhalation, rat:/14H	81,000 mg/m ³
LD ₅₀ , skin, rabbit:	15,800 mg/kg
Draize test, rabbit, skin 20 mg/24H:	Moderate
Draize test, rabbit, eye 40 mg	Moderate

Methanol has been investigated as mutagen, reproductive effector, and primary human irritant.

2-Propanol (100%)	RTECS# NT8050000
LD ₅₀ , oral, rat	5,040 mg/kg
LC ₅₀ , inhalation, rat:/8H	16,000 ppm
Draize test, rabbit, skin 100 mg/24H	Moderate
Draize test, rabbit, eye 40 mg	Moderate

2-Propanol has been investigated as a tumorigen, mutagen, reproductive effector, and primary human irritant.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity: LC ₅₀ – <i>Rainbow trout</i>	12.9-15.3 gm/l (flow through/96H/20-21°C)
EC ₅₀ - <i>Phytobacterium phosphoreum</i>	34.9 gm/l 5-30 min.

Environmental Fate: This product is expected to readily biodegrade in contact with soils and natural waters.

SECTION 13 DISPOSAL INFORMATION

This product, containing ethanol, methanol and 2-propanol, may be disposed to an industrial sewer system if permitted by local authority having jurisdiction. Otherwise, it must be disposed in a manner consistent with national, state, and local regulations.

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:

14 06 03* other solvents and solvent mixtures.

United States: Waste product, when ready for disposal should be disposed as a US Environmental Protection Agency RCRA hazardous waste, D001, Ignitable. Used 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 regulated by ICAO/IATA (air), IMDG (sea), ADR (road), RID (rail), and USDOT.

Proper shipping name:	Alcohols n.o.s (Ethanol, Methanol)
UN Identification Number	UN1987
Hazard Class:	3
Packing Group:	II

SECTION 15 REGULATORY INFORMATION

Australia: Hazchem Code: 2[S]E
Poisons Schedule Number: S5

California: No Significant Risk Level: Ethyl alcohol in alcoholic beverages is a chemical known to the State of California to be a development toxin.

Canada: WHMIS: These products have WHMIS classifications of B2, D2A.

Section 15 – Regulatory Information (continued)

European Community:	Symbols:	F, Xn	
	Category of danger:	Flammable, Harmful	
	Risk phrases:	R11	Highly flammable
		R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
		R68/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed
	Safety phrases	S2	Keep out of the reach of children
		S7	Keep container tightly closed
		S16	Keep away from sources of ignition - No smoking
	OECD/High Production Volume (HPV) chemicals:	Ethanol is listed as a High Volume Production chemical.	
	WEEE and RoHS:	The WEEE and RoHS Directives are not applicable to these products.	
Japan:	Poisonous and Deleterious Substances Control Law:	Methanol 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 this product are t listed on the EPA Toxic Substances Control Act (TSCA) Inventory.	

Section 15 – Regulatory Information (continued)

Occupational Exposure Limits

Component	Occupational Exposure Limits, ppm	
Ethanol	ACGIH: TLV	1000 ppm TWA
	EU IOELV	None established
	Japan OEL	None established
	NIOSH REL:	1000 ppm TWA 3300 ppm IDLH
	US OSHA PEL	1000 ppm TWA
Methanol	ACGIH: TLV	200 ppm TWA 250 ppm STEL (Skin)
	Japan OEL	200 ppm TWA
	EU IOELV	200 ppm TWA
	NIOSH REL:	200 ppm TWA 6000 ppm IDLH
	US OSHA PEL	200 ppm TWA
2-Propanol	ACGIH: TLV	200 ppm TWA 400 ppm STEL
	EU IOELV	None established
	Japan OEL	None established
	NIOSH REL:	400 ppm TWA 2000 ppm IDLH
	US OSHA PEL	400 ppm TWA

SECTION 16 ADDITIONAL INFORMATION

Risk phrases referred to under Section 2:		
R11	Highly flammable.	
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.	
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.	
R36	Irritating to eyes	
R67	Vapours may cause drowsiness and dizziness	

Section 16 – Additional Information (continued)

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
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.
IOELV	EU Indicative Occupational Exposure Limit Value
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.
LDLo	Lowest observed lethal dose
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)
skin	potential significant contribution to overall exposure by the cutaneous route
VLE	15 minute short term exposure limit (France)
WHMIS	Workplace Hazardous Materials Information System (Canada)

This safety data sheet has been prepared to comply with the requirements of European Community Directive 2001/58/EC and ANSI Z400.1-1998.

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