



Material Safety Data Sheet

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SECTION 1 PRODUCT AND COMPANY INFORMATION

Trade Name: Antibody in buffer with Tris, Glycine, EDTA, and Sodium Azide.
Catalogue Number(s): 06-248 Anti-IRS1 Polyclonal Antibody
Chemical Name: Aqueous solutions containing antibodies, trometamol (Tris), glycine, sodium chloride (NaCl), ethylenediamine tetraacetic acid (EDTA), bovine serum albumin (BSA), and sodium azide
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 (weight percent)	Symbol letters*	R Phrases**
Trometamol [Tris]	201-064-4	77-86-1	<2.0%	Xi	R36/37/38
Glycine	200-272-2	56-40-6	<2.0%	Xi	R36/37/38
Ethylenediamine-tetraacetic acid [EDTA]	200-449-4	60-00-4	<1.0%	Xi	R36/37/38
Sodium Azide	247-852-1	26628-22-8	0.1-0.2%	T+ N	R28, R32, R50/53

* 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.

These products also contain antibodies, NaCl, BSA, 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: These products are classified as harmful, **Xn** according to Directive 1999/45/EC.

Adverse human health effects

Contact with Eyes: Mild eye irritant

Ingestion: Neurological toxin with hypotensive, visual, and acute cerebral effects.

Inhalation (Short Term): Possible respiratory tract and mucous membrane irritant, with symptoms similar to those by ingestion.

Inhalation (Long Term): Prolonged or repeated exposure to sodium azide solution aerosols may result in permanent neurological damage, collapse, or death.

Skin Contact: Possible skin irritant. Sodium azide may be absorbed through the skin with systemic toxicity. Sensitive individuals may experience an allergic reaction to the polypeptide component of this product.

Target Organs: Central nervous system, lungs, cardiovascular system, eyes, skin.

Medical conditions aggravated by exposure: Exposure to sodium azide will exacerbate existing hypotensive conditions. Anaphylactic allergic reactions in sensitized individuals.

Adverse environmental effects: Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Adverse physiochemical effects: Sodium azide may react with lead and copper plumbing to form highly explosive metal azides.

SECTION 4 FIRST AID MEASURES

Contact with 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: Sodium azide solution aerosols are poisonous. 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.

SECTION 5 FIRE FIGHTING MEASURES

Flash Ignition Temperature: Not Determined; Not considered to be a fire hazard.

Autoignition Temperature (ASTM D1929): 572°F (solid sodium azide)

Suitable extinguishing media: Water spray, carbon dioxide, dry chemical powder or foam.

Unsuitable extinguishing media: None reported.

Special protective equipment for firefighters: In a fire, large quantities of sodium azide solution may generate significant quantities of hazardous aerosols. Self contained breath apparatus is required.

Special exposure hazards: Approach first from upwind direction to avoid sodium azide aerosols.

SECTION 6 ACCIDENTAL RELEASE

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 sodium azide 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, 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. Sodium azide is considered to have adverse effects on aquatic life.

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

	Normal Handling Conditions	Emergency Response Conditions
Specific Protection		
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
Odor:	None
Odor Threshold:	No data has been found
pH:	7.0 – 8.0
Melting Point:	Not available
Boiling Point:	Decomposes (Sodium Azide)
Flash Ignition Point:	>200°C Not considered to be a fire hazard.
Explosive Properties:	Over a period of time, sodium azide may react with copper, lead, brass, or solder in plumbing systems to form an accumulation of the highly explosive compounds of lead azide & copper azide.
Oxidizing Properties:	Not considered to have oxidizing properties.
Vapor pressure, 20 °C:	<1 mm Hg
Solubility:	Miscible with water
Specific Gravity (Water = 1.0):	1.2 – 1.4
Vapor Density, 20 °C:	Essentially that of water
Viscosity, centipoise:	Not available
Partition coefficient (n-octanol/water):	Not available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability:	Stable under normal temperatures and pressures. If boiled to dryness, the remaining sodium azide residue may rapidly decompose.
Incompatible With:	Strong oxidizing agents, acids, and metals
Hazardous Decomposition Products:	Nitrogen gas, sodium oxide fumes, oxides of carbon and nitrogen.
Conditions to Avoid:	Elevated temperature, heating to dryness.
Hazardous Polymerization:	Will not occur

SECTION 11 TOXICOLOGICAL INFORMATION

Inhalation:	May cause respiratory tract and mucous membrane irritation, with symptoms similar to those by ingestion.
Ingestion:	May cause toxic neurological effects including hypotension, visual, and acute cerebral effects.
Skin Contact:	May cause skin irritation or chronic dermatitis. Sodium azide may be absorbed through the skin with systemic toxicity. May cause anaphylactic allergic reactions in sensitized individuals.
Eye Contact:	May cause mild 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:	Chronic exposure to sodium azide may result in symptoms similar to acute ingestion.

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

Component: Sodium Azide (100%) (RTECS # VY8050000)

LD ₅₀ , oral, rat	27 mg/kg
LD ₅₀ , oral, mouse	27 mg/kg
LD ₅₀ , inhalation, rat	37 mg/m ³
LD ₅₀ , inhalation, mouse	32.4 mg/m ³
LD ₅₀ , skin, rat	50 mg/kg
LD ₅₀ , skin, rabbit	20 mg/kg

Sodium azide has been investigated as a mutagen and tumorigen.

Component: Tris (hydroxymethyl) aminomethane (100%)

(RTECS # TY2900000)

LD ₅₀ , oral, rat	5,900 mg/kg
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Moderately toxic: Probably oral lethal; dose (human) 0.5-5 G/KG, Between 1 oz & 1 pint for 70 Kg person (150 LB).

[Gosselin, R.E., H.C. Hodge, R.P. Smith, and M.N. Gleason. Clinical Toxicology of Commercial Products. 4th ed. Baltimore: Williams and Wilkins, 1976., p. II-74]

Component: Ethylenediaminetetraacetic acid (EDTA)(100%)

(RTECS # AH4025000)

LD ₅₀ , oral, mouse	30 mg/kg
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SECTION 12 ECOLOGICAL INFORMATION

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

Environmental Fate: Component: Sodium Azide (100%)

Aquatic Fate: Photolysis of sodium azide may result in metal nitrides initially, with the eventual formation of the free metal and nitrogen gas. [USEPA; Chemical Hazard Information Profile: Sodium Azide p.242 (1977) EPA-560/11-80-011]

Component: Ethylenediaminetetraacetic acid (EDTA)

Terrestrial Fate: Based on a classification scheme(1), an estimated Koc value of 98(SRC), determined from a water solubility of 1,000 mg/L(2) and a regression-derived equation(3), indicates that ethylenediamine tetraacetic acid is expected to have high mobility in soil(SRC).

Aquatic Fate: Based on a classification scheme(1), an estimated Koc value of 98(SRC), determined from a water solubility of 1,000 mg/L(2) and a regression-derived equation(3), indicates that ethylenediamine tetraacetic acid is not expected to adsorb to suspended solids and sediment(SRC).[(1) Swann RL et al; Res Rev 85: 17-28 (1983) (2) Wolf K, Gilbert PA; in The Handbook of Environmental Chemistry. Hutzinger O, ed. Berlin, Germany: Springer-Verlag 3F: 243-259 (1992) (3) Lyman WJ et al; Handbook of Chemical Property Estimation

Methods. Washington, DC: Amer Chem Soc pp. 4-9
(1990)]

Atmospheric Fate: According to a model of gas/particle partitioning of semivolatile organic compounds in the atmosphere(1), ethylenediamine tetraacetic acid, which has a vapor pressure of 2X10⁻¹² mm Hg at 25 deg C(2), is expected to exist solely in the particulate phase in the ambient atmosphere. Particulate-phase ethylenediamine tetraacetic acid may be removed from the air by wet and dry deposition(SRC). [(1) Bidleman TF; Environ Sci Technol 22: 361-367 (1988) (2) Daubert TE, Danner RP; Physical and Thermodynamic Properties of Pure Chemicals Data Compilation. Washington, DC: Taylor and Francis (1989)]

Volatilization from Water/Soil: The Henry's Law constant for ethylenediamine tetraacetic acid is estimated as 7.7X10⁻¹⁶ atm-cu m/mol at 25 deg C(SRC) derived from its vapor pressure, 2X10⁻¹² mm Hg mm Hg(1), and water solubility, 1,000 mg/l(2). This Henry's Law constant indicates that ethylenediamine tetraacetic acid is expected to be essentially nonvolatile from water surfaces(3). [(1) Daubert TE, Danner RP; Physical and Thermodynamic Properties of Pure Chemicals Data Compilation. Washington, DC: Taylor and Francis (1989) (2) Wolf K, Gilbert PA; in The Handbook of Environmental Chemistry. Hutzinger O, ed. Berlin, Germany: Springer-Verlag 3F: 243-259 (1992) (3) Lyman WJ et al; Handbook of Chemical Property Estimation Methods. Washington, DC: Amer Chem Soc pp. 15-1 to 15-29 (1990)]

European Union: When disposal is required, this product should 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:

Other than Pharmaceutical MSFU	20 01 39 separately collected fractions, plastics
Pharmaceutical MSFU with residual dangerous substances	07 05 13* solid wastes containing dangerous substances
Pharmaceutical MSFU without residual dangerous substances	07 05 14 solid wastes other than those mentioned in 07 05 13

United States: Dilute aqueous solutions of sodium azide may meet the definition of a US Environmental Protection Agency RCRA D003 (Reactive) hazardous waste. Unused product should be disposed of in a manner consistent with federal, state and local regulations.

Ethylenediamine tetraacetic acid (EDTA) is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance. [40 CFR 116.4; U.S. National Archives and Records Administration's Electronic Code of Federal 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

Australia	Hazchem Code:	2X (sodium azide)
	Poisons Schedule Number:	None allocated.
California	No Significant Risk Level:	None of the chemicals in these products are known to Millipore Corporation to be listed.
Canada	WHMIS:	D1A, D2B, F
European Union	Symbols:	Xn
	Category of danger:	Harmful
	Risk phrases:	R28: Very toxic if swallowed. R32: Contact with acids liberates very toxic gas. R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. R36/37/38: Irritating to eyes, respiratory system and skin.
	Safety phrases:	S 24/25: Avoid contact with skin and eyes. S 26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S 36/37/39: Wear suitable protective clothing, gloves and eye/face protection.
	OECD/High Production Volume (HPV) chemicals:	Not available
	WEEE/ RoHS:	The WEEE and RoHS Directives are not applicable to these products.
Japan	Poisonous and Deleterious Substances Control Law:	Sodium azide is listed as a Poisonous Substance under the Poisonous and Deleterious Substances Control Law
United States	EPA RQ (CERCLA Reportable Quantities) :	Sodium Azide: 1000 lbs. EDTA: 5000 lbs.
	EPA Extremely Haz. Substance:	Threshold Planning Quantity: Sodium Azide: 500 lbs.

Occupational Exposure Limits:

Component: Sodium Azide (100%)

AUSTRALIA time-weighted average 0.1 ppm (0.3 mg/m³), JAN1993

FINLAND time-weighted average 0.1 ppm (0.3 mg/m³), short term exposure limit 0.3 ppm (0.9 mg/m³), JAN1999

FRANCE	VME 0.1 mg/m ³ , VLE 0.3 mg/m ³ , Skin, FEB2006
GERMANY	MAK 0.2 mg/m ³ (inhalable), 2005
SWEDEN	time-weighted average 0.1 mg/m ³ ; short term exposure limit 0.3 mg/m ³ , Skin, JUN2005
UNITED KINGDOM	time-weighted average 0.1 mg/m ³ ; short term exposure limit 0.3 mg/m ³ (skin), 2005
NIOSH	REL C 0.1ppm (as HN ₃) (Skin); REL C 0.3 mg/m ³ (as NaN ₃) (Skin)
OSHA	none
ACGIH	TLV: 0.29 mg/m ³ (Ceiling value); A4 (not classifiable as a human carcinogen); (2005).
EU	OEL: 0.1 mg/m ³ as TWA, 0.3 mg/m ³ as STEL; (skin); (EU 2000).

SECTION 16 ADDITIONAL INFORMATION

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.
	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)
	WHMIS	Workplace Hazardous Materials Information System (Canada)

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

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