



Cell Signaling

TECHNOLOGY®

SAFETY DATA SHEET (SDS): According to the OSHA Hazard Communication Standard 29 CFR 1910.1200

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Version: 1

SECTION 1. Identification

Product identifier

Product number 4272
Product name Cytochrome c Antibody

Recommended use of the chemical and restrictions on use

Identified uses This product is intended for research purposes only.
Uses advised against This product is not intended for use in diagnostic procedures or therapeutics.
This product is not intended for use in humans or animals.

Manufacturer, importer, supplier

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SECTION 2. Hazard(s) identification

Classification

This substance/mixture is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS Label elements, including precautionary statements

Signal Word
None

Hazard statement(s)
None

Precautionary Statement(s)
None

Supplementary Hazard Information

Hazards not otherwise classified (HNOC) None.

SECTION 3. Composition/information on ingredients

Chemical nature Aqueous buffer solution

Chemical Name	CAS No	Weight %
glycerol	56-81-5	30-60
sodium chloride	7647-14-5	0.1-1
sodium 4-(2-hydroxyethyl)piperazin-1-ylethanesulphonate	75277-39-3	0.1-1

SECTION 4. First-aid measures

Eye contact Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.

Skin contact Consult a physician if necessary. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.

Inhalation Move to fresh air. Consult a physician. If not breathing, give artificial respiration.

Ingestion Rinse mouth. Drink plenty of water. If symptoms persist, call a physician. Do NOT induce vomiting. If swallowed, do not induce vomiting - seek medical advice. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

No information available.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Advice for emergency responders

General advice If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance. Do not breathe dust/fume/gas/mist/vapors/spray.

Protection of first-aiders Use personal protective equipment.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media CAUTION: Use of water spray when fighting fire may be inefficient.

Specific hazards arising from the chemical

No information available.

Explosion Data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel Ensure adequate ventilation.

Other information No information available.

Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

Methods and material for containment and cleaning up**Methods for containment
Methods for cleaning up**

Prevent further leakage or spillage if safe to do so.

Cover liquid spill with sand, earth or other noncombustible absorbent material. Cover powder spill with plastic sheet or tarp to minimize spreading. Pick up and transfer to properly labeled containers.

SECTION 7. Handling and storage**Precautions for safe handling**

Avoid contact with skin, eyes and clothing. Wear personal protective equipment. Prevent the formation of vapors, mists and aerosols. Do not eat, drink or smoke when using this product.

Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children.

Packaging material

No information available.

Incompatible products

Strong oxidizing agents.

SECTION 8. Exposure controls/personal protection**Control parameters**

Occupational exposure limit values			
Chemical Name	ACGIH TLV	OSHA PEL	NIOSH REL
glycerol	-	TWA mist, total particulate: 15 mg/m ³ TWA mist, respirable fraction: 5 mg/m ³	-

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

Individual protection measures, such as personal protective equipment

Personal protective equipment (PPE) needs to be selected depending on the implemented engineering controls, frequency/duration of work activities and the concentrations of the hazardous substance.

Eye/face protection

Tightly fitting safety goggles.

Skin and body protection

Wear protective gloves/clothing.

Respiratory protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. Physical and chemical properties**Information on basic physical and chemical properties**

Physical state	Liquid
Appearance	Clear
Odor	No information available
Color	Colorless
Odor Threshold	No information available
pH	7.4 @ 20 °C
Melting point/freezing point	No information available
Initial boiling point and boiling range	No information available
Flash point	No information available.
Evaporation rate	No information available
Flammability (solid, gas)	No information available
Upper flammability limit	No information available.
Lower flammability limit	No information available.
Vapor pressure	No information available
Vapor density	No information available
Relative density	No information available
Solubility	No information available.
Solubility in other solvents	No information available
Partition coefficient: n-octanol/water	No information available
Autoignition temperature	No information available
Decomposition temperature	No information available.
Explosive properties	No information available
Oxidizing properties	No information available
VOC content	No information available
Viscosity	No information available.
Density	No information available.

SECTION 10. Stability and reactivity

Reactivity

No information available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

Hazardous reactions	None under normal processing.
Hazardous polymerization	None under normal processing.

Conditions to Avoid

No information available.

Incompatible Materials

Strong oxidizing agents.

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating gases and vapors: Acrolein. Hydrogen chloride.

SECTION 11. Toxicological information

Information on likely routes of exposure

Inhalation	Mist may be injurious to the kidneys at very high exposure levels. Not an expected route of exposure.
Eye contact	Contact with eyes may cause mild irritation.

Skin contact	No known hazard in contact with skin.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Information on toxicological effects

This material should only be handled by, or under the close supervision of, those properly qualified in the handling and use of potentially hazardous chemicals. It should be borne in mind that the toxicological and physiological properties of this compound is not well defined.

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
glycerol	12600 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	-
sodium chloride	3000 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	> 42000 mg/m ³ (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Symptoms	No information available.
Serious eye damage/eye irritation	Mild / Nonirritant: OECD TG 437 (Bovine Corneal Opacity and Permeability (BCOP)).
Sensitization	No information available.
Mutagenic effects	No information available.
Carcinogenicity	No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogen by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity	No information available.
STOT - single exposure	No information available.
STOT - repeated exposure	No information available.
Target Organ Effects	Eyes, Respiratory system, Kidney.
Neurological effects	No information available.
Aspiration Hazard	No information available.
Other information	glycerol: NOAEL (inhalation: 6 h/d, 5d/week) = 0.167 mg/L (Rat) 13 weeks glycerol: LOAEL (inhalation: 6 h/d, 5d/week) = 1-4 mg/L (Rat) 2 weeks (Source: IUCLID / Method: Directive 87/302/EEC, part B "Sub-chronic inhalation toxicity study: 90-day repeated dose study using rodent species")

SECTION 12. Ecological information**Ecotoxicity**

Product does not present an aquatic toxicity hazard based on known or supplied information.

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
glycerol	-	LC50 51 - 57 mL/L (Oncorhynchus mykiss) 96 h	EC50 500 mg/L (Daphnia magna) 24 h
sodium chloride	-	LC50 4747 - 7824 mg/L (Oncorhynchus mykiss) 96 h LC50 12946 mg/L (Lepomis macrochirus) 96 h LC50 5560 - 6080 mg/L (Lepomis macrochirus) 96 h LC50 6420 - 6700 mg/L (Pimephales promelas) 96 h LC50 7050 mg/L (Pimephales promelas) 96 h LC50 6020 - 7070 mg/L (Pimephales promelas) 96 h	EC50 340.7 - 469.2 mg/L (Daphnia magna) 48 h EC50 1000 mg/L (Daphnia magna) 48 h

Persistence and degradability	Product is biodegradable.
Bioaccumulation	Not likely to bioaccumulate.
Mobility	Will likely be mobile in the environment due to its water solubility

Chemical Name	Octanol-Water Partition Coefficient
glycerol	-1.76

Other adverse effects

No information available.

SECTION 13. Disposal considerations

Waste Disposal Methods

Dispose of in accordance with all applicable national environmental laws and regulations.

Disposal considerations

Do not empty into drains; dispose of this material and its container in a safe way.

SECTION 14. Transport information

This material is not subject to regulation as a hazardous material for shipping.

SECTION 15. Regulatory information

North American Inventory Listing

Chemical Name	TSCA 8(b)	TSCA 12(b)	DSL	NDSL
glycerol	Listed	Not Listed	Listed	Not Listed
sodium chloride	Listed	Not Listed	Listed	Not Listed
sodium 4-(2-hydroxyethyl)piperazin-1-yl ethanesulphonate	Listed	Not Listed	Not Listed	Listed

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification

This product does not meet the criteria for classification under the Hazardous Products Act.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product contains the following U.S. State Right to Know chemicals:

Chemical Name	New Jersey	Massachusetts	Pennsylvania
glycerol	Listed	Listed	Listed

U.S. FIFRA Label Information

This product does not contain any substances regulated as pesticides.

US Commerce Department - Export Administration Regulations Information

This product does not contain any substances regulated under the Chemical Weapons Convention (CWC).

U.S. Drug Enforcement Administration Information

This product does not contain any substances regulated under the DEA.

SECTION 16. Other information

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Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet