



Material Safety Data Sheet (MSDS)

Version No. 1

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY/ UNDERTAKING

1.1. IDENTIFICATION OF THE SUBSTANCE OR PREPARATION

APPLICABLE PRODUCTS:

- IB29300** - AMINOACYL-TRNA SYNTHETASE COMPLEX-INTERACTING MULTIFUNCTIONAL PROTEIN I (AIMP1) ELISA
- IB29301** - LYSYL-TRNA SYNTHETASE (KRS) ELISA
- IB29302** - GLYSYL-TRNA SYNTHETASE (GRS) ELISA
- IB29303** - TRYPTOPHANYL-TRNA SYNTHETASE (WRS) ELISA

COMPONENTS:

Stop Solution: Sulfuric Acid, 95-98% 2N H₂SO₄, Formula Weight 98.08 g/mol.

Development Reagent: TMB Substrate Solution, 0.04% (0.4g/L).

HRP Secondary Antibody: Lyophilized antibodies, BSA, NaCl, NaH₂PO₄, NaN₃, and Thiomersal. Sodium Azide: < 3% (content, weight percent). Thiomersal: <1% (content).

Detection antibody, standard protein, sample diluents, and assay diluent are NOT hazardous.

1.2. COMPANY / UNDERTAKING IDENTIFICATION

MANUFACTURED FOR: **IMMUNO-BIOLOGICAL LABORATORIES, INC. (IBL-AMERICA)**
8201 Central Ave NE, Suite P
Minneapolis, MN 55432
Toll Free: (888) 523-1246
Fax: (763) 780-2988
www.ibl-america.com
info@ibl-america.com

1.3. EMERGENCY TELEPHONE

In the event of a medical emergency, please dial 911.

3050 Spruce Street, Saint Louis, MO 63103, USA

Website: www.sigmaldrich.comEmail USA: techserv@sial.comOutside USA: eurtechserv@sial.com

Product Specification

Product Name:
Sulfuric acid - ACS reagent, 95.0-98.0%

Product Number: 258105 H₂SO₄
CAS Number: 7664-93-9
Formula: H₂O₄S
Formula Weight: 98.08 g/mol

TEST	Specification
Appearance (Clarity)	Clear
Appearance (Color)	Colorless
Appearance (Form)	Liquid
Purity (Titration by NaOH)	95.0 - 98.0 %
Residue on Ignition (ppm)	≤ 5 ppm
Color Test	≤ 10 APHA
Arsenic (As)	≤ 0.01 ppm
Chloride (CL)	≤ 0.2 ppm
Iron (Fe)	≤ 0.2 ppm
Mercury (Hg)	≤ 5 ppb
Heavy Metal (as Pb)	≤ 1 ppm
Ammonium	≤ 2 ppm
Nitrate (ppm)	≤ 0.5 ppm
Subs Red Permanganate (ppm)	≤ 2 ppm
Meets ACS Requirements	Current ACS Specification

Sigma-Aldrich warrants, that at the time of the quality release or subsequent retest date this product conformed to the information contained in this publication. The current Specification sheet may be available at Sigma-Aldrich.com. For further inquiries, please contact Technical Service. Purchaser must determine the suitability of the product for its particular use. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Material Safety Data Sheet

TMB Substrate Solution

1. Product and company identification

Product name	: TMB Substrate Solution	Manufacturer	: Thermo Fisher Scientific Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 United States 815.968.0747 or 800.874.3723
Synonym	: TMB Substrate		
Supplier	: Thermo Fisher Scientific Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 United States 815.968.0747 or 800.874.3723		
Code	: 0034028 0034028B 0034029 1857867 1857870 1857871 1857872 1859173 1859350 1901712 N301 NCI7872		
MSDS #	: 5454		
Validation date	: 10/3/2011.		
Print date	: 10/3/2011.		
Responsible name	: MSDS Specialist		
In case of emergency	: CHEMTREC: 800.424.9300 OUTSIDE US: 703.527.3887	Material uses	: Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.
Product type	: Liquid.		

2. Hazards identification

Emergency overview

Physical state	: Liquid.
Color	: Clear. Colorless to light yellow.
Odor	: Odorless.
Hazard statements	: NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
OSHA/HCS status	: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.
Skin	: No known significant effects or critical hazards.
Eyes	: No known significant effects or critical hazards.
Potential chronic health effects	
Chronic effects	: No known significant effects or critical hazards.

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TMB Substrate Solution

2. Hazards identification

Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Over-exposure signs/symptoms	
Inhalation	: No specific data.
Ingestion	: No specific data.
Skin	: No specific data.
Eyes	: No specific data.
Medical conditions aggravated by over-exposure	: None known.

See toxicological information (Section 11)

3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
Ingestion	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training.
Notes to physician	: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product	: In a fire or if heated, a pressure increase will occur and the container may burst.
Extinguishing media	
Suitable	: Use an extinguishing agent suitable for the surrounding fire.
Not suitable	: None known.
Special exposure hazards	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Hazardous thermal decomposition products	: No specific data.
Special protective equipment for fire-fighters	: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.
- Storage** : Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

Canada

Occupational exposure limits

No exposure limit value known.

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

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8. Exposure controls/personal protection

- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9. Physical and chemical properties

- Physical state** : Liquid.
- Flash point** : [Product does not sustain combustion.]
- Color** : Clear. Colorless to light yellow.
- Odor** : Odorless.
- pH** : 3.35 to 3.75
- Relative density** : 1.01
- Solubility** : Easily soluble in the following materials: cold water and hot water.

10. Stability and reactivity

- Chemical stability** : The product is stable.
- Conditions to avoid** : No specific data.
- Incompatible materials** : No specific data.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

11. Toxicological information

United States

Acute toxicity

- Conclusion/Summary** : To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

Chronic toxicity

- Conclusion/Summary** : Not available.

Irritation/Corrosion

- Conclusion/Summary** : Not available.

Sensitizer

- Conclusion/Summary** : Not available.

Carcinogenicity

- Conclusion/Summary** : Not available.

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11. Toxicological information**Mutagenicity**

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Canada**Acute toxicity**

Conclusion/Summary : To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitizer

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12. Ecological information

Ecotoxicity : No known significant effects or critical hazards.

United States**Aquatic ecotoxicity**

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

Canada**Aquatic ecotoxicity**

Conclusion/Summary : Not available.

Persistence/degradability

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13. Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a

13. Disposal considerations

safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
DOT Classification	Not regulated.	-	-	-
IATA-DGR Class	Not regulated.	-	-	-

PG* : Packing group

15. Regulatory information**United States**

HCS Classification : Not regulated.

U.S. Federal regulations : TSCA 8(a) IUR Exempt/Partial exemption: Not determined
United States inventory (TSCA 8b): All components are listed or exempted.

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

State regulations

Massachusetts : None of the components are listed.

New York : None of the components are listed.

New Jersey : None of the components are listed.

Pennsylvania : None of the components are listed.

United States inventory (TSCA 8b) : All components are listed or exempted.

Canada

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Canadian lists

Canadian NPRI : None of the components are listed.

15. Regulatory information

CEPA Toxic substances : None of the components are listed.

Canada inventory : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists :

- Australia inventory (AICS)**: All components are listed or exempted.
- China inventory (IECSC)**: All components are listed or exempted.
- Japan inventory**: Not determined.
- Korea inventory**: Not determined.
- New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted.
- Philippines inventory (PICCS)**: Not determined.

16. Other information

Label requirements : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.

Hazardous Material Information System (U.S.A.) :

Health	0
Flammability	0
Physical hazards	0

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.) :



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Prepared by : MSDS Specialist

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.



Material Safety Data Sheet


MSDS/SDS Number: 00000289MSDS
Latest Revision Date: April 26, 2011
Revision: A

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

Product Name: Lyophilized Antibodies, BSA, NaCl, NaH₂PO₄, NaN₃ and Thiomersal.
Catalogue Number(s): See Section 16.
Chemical Name: Lyophilized powder containing [Albumins, Blood Serum], Sodium Chloride, Sodium Dihydrogenorthophosphate, Sodium Azide, Thiomersal and Antibodies.
Synonyms: None.
Intended Product Use: Antibodies intended for research use only.
Manufacturer/Distributor: Millipore Corporation (Corporate Headquarters) Millipore S.A.S. (European Headquarters)
Postal Address: 290 Concord Road Billerica MA, 01821 USA Boite Postale 116 Molsheim Cedex, 67124 France
Telephone Number: +1-978-715-1335 +33(0)3 90 46 90 00
Hours of Operation: 9:00 am to 4:00 pm ET (GMT -4) 9:00 am to 4:00 pm EU CT (GMT +1)
Worldwide Offices: <http://www.millipore.com/offices/cp3/officeshome>
Email: msds@millipore.com
CHEMTREC Emergency Telephone Number: International +1-703-527-3887 (collect) North America 1-800-424-9300 (toll free)

SECTION 2 HAZARDS IDENTIFICATION

Globally Harmonized System of Classification and Labeling of Chemicals (GHS):

Symbol:  **Hazard Category:** 2A: Serious Eye Damage/Irritation
2: Skin Corrosion/Irritation
3: Specific Target Organ Toxicity, Single Exposure
4: Acute Toxicity

Signal Word: Warning

Hazard Statement: H302+H312+H332: Harmful if swallowed, in contact with skin, or if inhaled.
H315+H320: Causes skin and eye irritation.
H335: May cause respiratory irritation.

GHS Precautionary Statements:

- Prevention:** P261: Avoid breathing dust.
P264: Wash hands thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P281: Use personal protective equipment as required.
- Response:** P308+P313: If exposed or concerned: Get medical advice/attention.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P330: Rinse mouth.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P362: Take off contaminated clothing and wash before reuse.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lens if present and easy to do. Continue rinsing.
- Storage:** P403+P233: Store in a well ventilated place. Keep container tightly closed.
- Disposal:** P501: Dispose of content/container in accordance with local regulations.

Registration, Evaluation, Authorization, and Restriction of Chemicals (REACH):

Symbol:  **Symbol Letter:** Xn

Hazard: Harmful



Risk Phrase: R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38: Irritating to eyes, respiratory system and skin.

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** †
Sodium Chloride:	231-598-3	7647-14-5	20 - 50 %	N/A	N/A
Sodium Dihydrogenorthophosphate:	231-449-2	7558-80-7	20 - 50 %	N/A	N/A
Sodium Azide:	247-852-1	26628-22-8	< 3 %	T+ N	R28 R32 R50/53
Thiomersal:	200-210-4	54-64-8	< 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**
Antibody:	N/A	N/A	< 5 %	N/A	N/A
Albumins, Blood Serum:	232-936-2	9048-46-8	20 - 50 %	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 15.

† 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.	Redness, irritation, swelling and watering of the eyes, blurred vision, and excessive dilation of the pupil.
Ingestion:	Seek medical attention immediately. Never give an unconscious person anything by mouth.	Nausea, vomiting, diarrhea and polydipsia are common after ingestions. May cause speech impairment, erethism, decreased concentration, fatigue, dysphagia, constricted visual fields, mercurialentis, ataxia, tremors, incoordination, abnormal reflexes, decreased sensation, paresthesias of the lips, mouth tongue, hands and feet.
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. Symptoms of exposure parallel ingestion.
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 and dermatitis. May be absorbed through the skin causing systemic toxicity in large doses.
Mild Exposure:	The most commonly reported health effect is hypotension, which can occur independent of route of exposure. Mild to moderate exposures can cause headache, mild hypotension, syncope, nausea, vomiting, diarrhea, abdominal pain, and a general feeling of apprehension and unwellness.	

Acute Exposure: More serious poisoning can cause central nervous system depression, coma, chest discomfort, hyperthermia or hypothermia, pulmonary edema, lactic acidosis, bradycardia or tachycardia, severe hypotension (sometimes preceded by hypertension), atrial and ventricular dysrhythmias, electrocardiographic changes, shortness of breath, diaphoresis, blurred vision, and seizures.

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 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
Albumins, Blood Serum:	Not Listed	Not Listed	Not Listed	None
Sodium Chloride:	Not Listed	Not Listed	Not Listed	See Below
Russia:	OEL-STEL 5 mg/m ³ , JUN2003			

Sodium Dihydrogenorthophosphate:	Not Listed	Not Listed	Not Listed	None
Sodium Azide:	Not Listed	Ceiling 0.3 mg/m ³ [Skin]	Ceiling 0.29 mg/m ³ , A4 Not classifiable as a human carcinogen.	See Below
Australia:	Ceiling 0.11 ppm (0.3 mg/m ³), JUL2008			
Belgium:	TWA 0.1 mg/m ³ , STEL 0.3 mg/m ³ , Skin, MAR2002			
Denmark:	TWA 0.1 mg/m ³ , OCT 2002			
E.C.:	TWA 0.1 mg/m ³ ; STEL 0.3 mg/m ³ (skin), FEB 2006			
Finland:	TWA 0.1 ppm (0.3 mg/m ³), STEL 0.3 ppm (0.9 mg/m ³), 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			
Hungry:	TWA 0.1 mg/m ³ , STEL 0.3 mg/m ³ , SEP2000			
Korea:	Ceiling .1 ppm (0.3 mg/m ³), 2006			
The Netherlands:	MAC-TGG 0.1 mg/m ³ , Skin, 2003			
New Zealand:	Ceiling .11 ppm (0.29 mg/m ³), JAN2002			
Sweden:	TWA 0.1 mg/m ³ ; STEL 0.3 mg/m ³ , Skin, JUN2005			
Switzerland:	MAK- week 0.2 mg/m ³ ,KZG- week 0.4e mg/m ³ , DEC2006			
United Kingdom:	TWA 0.1 mg/m ³ ; STEL 0.3 mg/m ³ (skin), 2005			
Thiomersal:	Ceiling 0.04 mg/m ³ ; TWA 0.01 mg/m ³ [Mercury (organo) alkyl compounds (as Hg)]	TWA 0.01 mg/m ³ ; STEL 0.03 mg/m ³ (Skin); IDLH 2 mg/m ³ [Mercury (organo) alkyl compounds (as Hg)]	TWA 0.01 mg/m ³ ; STEL 0.03 mg/m ³ (Skin) [Mercury (organo) alkyl compounds (as Hg)]	See Below
Australia:	TWA 0.01 mg(Hg)/m ³ , STEL 0.03 mg(Hg)/m ³ , JUL2008			
Belgium:	TWA 0.1 mg(Hg)/m ³ , Skin, MAR2002			
Finland:	TWA 1 mg(Hg)/m ³ , JAN1999			
France:	VME 0.1 mg(Hg)/m ³ , Skin, FEB2006			
Hungry:	TWA 0.01 mg(Hg)/m ³ , STEL 0.04 mg(Hg)/m ³ , Skin, SEP2000			
Norway:	TWA 0.05 mg(Hg)/m ³ , JAN1999			
The Phillipiennes:	TWA 0.05 mg(Hg)/m ³ , JAN1993			
Poland:	MAC(TWA) 0.05 mg(Hg)/m ³ , MAC(STEL) 0.15 mg(Hg)/m ³ , JAN1999			
Russia:	TWA 0.05 mg(Hg)/m ³ , STEL 0.2 mg(Hg)/m ³ , Skin, JUN2003			
Sweden:	TWA 0.01 mg(Hg)/m ³ , Skin, JUN2005			
Thailand:	STEL 0.05 mg(Hg)/m ³ , JAN1993			

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:	Dry White to Grey Powder	
Odor:	None	
Odor Threshold:	Not Available	
pH:	7.6	
Melting Point/Freezing Point:	Not Available	
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:	LEL: Not Available	UEL: Not Available
Vapor Pressure:	Not Available	
Vapor Density, 20 °C:	Not Available	
Relative Density (Water = 1.0):	Not Available	
Solubility:	Soluble	
Partition Coefficient (n-octanol/water):	Not Available	
Auto Ignition Temperature (ASTM D1929):	Not Available	
Decomposition Temperature:	Not Available	
Oxidizing Properties:	None	
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	Strong acids or bases, metals (lead, silver, mercury, and copper), strong oxidizers, extreme temperatures, lithium, bromine trifluoride,

Avoid: hydrogen sulfide, and mercury oxides. Mixing sodium azide with chromyl chloride, benzoyl chloride, barium carbonate, or trifluoroacryloyl fluoride causes violent explosive reactions.

Hazardous Decomposition Products: Heating to decomposition temperature may produce carbon monoxide, carbon dioxide, nitrogen oxides, phosphorus oxides, chloride and sodium oxide. When sodium azide is heated above 300 °C mixture will explode upon decomposition liberating nitrogen gas and sodium.

SECTION 11 TOXICOLOGICAL INFORMATION

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

Albumins, Blood Serum: RTECS #AY9296000

Sodium Chloride: RTECS #VZ4725000

Sodium Dihydrogenorthophosphate: RTECS #WA1900000

Sodium Azide: RTECS #VY8050000

Thiomersal: RTECS #OV8400000

	Toxicity Test	Exposure Route	Dose	Observed Effect	
Acute Toxicity:					
Albumins, Blood Serum:	LD (Rat)	Intravenous	> 12,500 mg/kg	Behavioral: Somnolence (General Depressed Activity); Lungs, Thorax, or Respiration: Respiratory Stimulation.	
Sodium Chloride:	LD ₅₀ (Rat)	Oral	3,000 mg/kg	N/A	
	LD ₅₀ (Rat)	Intraperitoneal	2,600 mg/kg	N/A	
Sodium Dihydrogenorthophosphate:	LD ₅₀ (Rat)	Oral	8,290 mg/kg	N/A	
Sodium Azide:	LC ₅₀ (Rat)	Inhalation	37 mg/m ³	Eye: Other eye effects Behavioral: Convulsions or effect on seizure threshold Lung, Thorax, or Respiration: Structural or functional change in trachea or bronchi	
	LD ₅₀ (Rat)	Oral	27 mg/kg	N/A	
	LD ₅₀ (Rat)	Subcutaneous	23 mg/kg	N/A	
	LD ₅₀ (Rabbit)	Skin	20 mg/kg	N/A	
	Thiomersal:	LD ₅₀ (Rat)	Oral	75 mg/kg	N/A
		LD ₅₀ (Mouse)	Oral	91 mg/kg	N/A
		LD ₅₀ (Rat)	Subcutaneous	98 mg/kg	N/A
LD ₅₀ (Mouse)		Subcutaneous	66 mg/kg	N/A	
	TD _{LO} (Man)	Oral	83 mg/kg	Coma ;Lungs, Thorax, or Respiration--Other changes ;Changes in tubules	

Skin Corrosion/Irritation:

Sodium Chloride:	Skin Irritation (Rabbit)	Skin	500 mg/24H	Mild
Thiomersal:	TD _{Lo} (Human)	Intradermal	0.143 ug/kg	Dermatitis, allergic (after systemic exposure)
	TD _{Lo} (Human)	Parenteral	1.43 ug/kg	Dermatitis, allergic (after systemic exposure)
	TD _{Lo} (Human)	Skin	0.05 pph	Dermatitis, allergic (after topical application)

Serious Eye Damage/Eye Irritation:

Sodium Chloride:	Eye Irritation (Rabbit)	Eye	100 mg/24H	Moderate
Thiomersal:	Eye Irritation (Rabbit)	Eye	8 ug	Mild

Respiratory or Skin Sensitization:

Not Available

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:
Albumins, Blood Serum:	Not Listed	Not Listed	Not Listed
Sodium Chloride:	Not Listed	Not Listed	Not Listed
Sodium Dihydrogenorthophosphate:	Not Listed	Not Listed	Not Listed
Sodium Azide:	Not Listed	Not Listed	Not Listed
Thiomersal:	Not Listed	Not Listed	Not Listed

SECTION 12 ECOLOGICAL INFORMATION**Ecotoxicity:** Ecotoxicity information for this product as a whole does not exist, below is data for the individual components.

Albumins, Blood Serum: Not Available.

Sodium Chloride: LC₅₀ Carassius Auratus 24 Hours 9,800,000 ug/L
 LC₅₀ Carassius Auratus 48 Hours 7,200,000 ug/L
 LC₅₀ Carassius Auratus 96 Hours 7,050,000 ug/L

Sodium Dihydrogenorthophosphate: LC₅₀ Gambusia Affinis 24 Hours 186,000 ug/L
 LC₅₀ Gambusia Affinis 48 Hours 186,000 ug/L
 LC₅₀ Gambusia Affinis 96 Hours 186,000 ug/L

Sodium Azide: LC₅₀ Lepomis Macrochirus 24 Hours 1,800 ug/L
LC₅₀ Lepomis Macrochirus 48 Hours 800.0 ug/L
LC₅₀ Lepomis Macrochirus 96 Hours 680.0 ug/L

Thiomersal: LC₅₀ Lepomis Macrochirus 24 Hours 110,000 ug/L
LC₅₀ Lepomis Macrochirus 48 Hours 64,500 ug/L

Mobility:

Sodium Azide: Aquatic Fate: Sodium azide is stable in water in the absence of light but appears to be susceptible to photo-decomposition by solar radiation. Photolysis of sodium azide may result in metal nitrides initially, with the eventual formation of the free metal and nitrogen gas.

Persistence and Degradation:

Sodium Azide: The dissipation of azides in soil is not by microbial action but is strictly a chemical process accelerated by increasing acidity and elevated temperature. Sodium azide dissipates rapidly in soils by oxidation or by reaction of hydrazoic acid with soil organic acids to form azides of these acids which decomposes by the Curtius rearrangement.

Bio Accumulative Potential: Not Available.

Results of PBT Assessment: Not Available.

Other Adverse Effects: None Known.

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: Mercury and Mercury Compounds.

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) – January 13, 2010: This product does not contain SVHC's in concentrations above 0.1% weight/weight.

Category of Danger: T+: Very Toxic
N: Dangerous for the environment
Xn: Harmful

Risk Phrases: R20/21/22: Harmful by inhalation, in contact with skin and if swallowed.
R36/37/38: Irritating to eyes, respiratory system and skin.
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.

Safety Phrases: S7/9: Keep container tightly closed and in a well-ventilated place.
S20/21: When using do not eat, drink or smoke.
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: Sodium Chloride and Sodium Dihydrogenorthophosphate.

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

Japan: Poisonous and Deleterious Substances Control Law: Sodium Azide: Poisonous Substance.

SECTION 16 ADDITIONAL INFORMATION

Product Number: Product Name:

- AP160F Rabbit anti-Mouse IgG, FITC conjugate
- AP106C Rabbit anti-Goat IgG, Cy3 Conjugate
- AP120F Goat anti-Human IgA, IgG, and IgM, FITC Conjugate
- AP124C Goat anti-Mouse IgG, Cy3 conjugate
- AP128C Goat anti-Mouse IgM, μ chain, Cy3 conjugate
- AP132S Goat anti-Rabbit IgG, Cy5 Conjugate

- AP132P Goat anti-Rabbit IgG, Peroxidase Conjugated
- AP136C Goat anti-Rat IgG, Cy3 Conjugate
- AP187R Goat anti-Rabbit IgG, Rhodamine Conjugate, Species Adsorbed: H, M, R
- AP182M IGG, DNK X RB, AMCA - 500 µg.

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
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
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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