

Material Safety Data Sheet

Conforms to 93/112/EC and ISO 11014-1

Responsible Name MSDS_Specialist

? Section 1. Chemical Product and Company Identification**Product Name** Lysis/Binding/Wash Buffer**Product no.** 1861112**Supplier** In USA:
Thermo Fisher Scientific
P.O. Box 117
Rockford, IL 61105
USA
815.968.0747 or
1.800.874.3723In Europe:
Perbio Science
Industriezone III
Industrielaan 27
9320 Erembodegem-Aalst
Belgium
Tel:+32 53 83 44 04
Fax:+32 53 83 76 38**Manufacturer** Pierce
3747 N. Meridian Road
P.O. Box 117
Rockford, IL 61105
USA
815.968.0747 or
1.800.874.3723
(815)968-7316 fax
www.thermo.com**In case of emergency** CHEMTREC:
800.424.9300
OUTSIDE US:
703.527.3887**Print date** 8/20/2007**Validation date** 8/20/2007**MSDS#** 7832**Use of the substance/preparation** Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.**Section 2. Composition, Information on Ingredients****Substance/preparation** : Preparation

Ingredient name	CAS number	%	EC number	Classification
Trade Secret #2		1 - 3		Xi; R36/37/38
Trade Secret #1		1 - 3		Xi; R36/37/38

Section 3. Hazards identification**United States** Review the most current and approved institutional guideline, protocol, standard operating procedure(s) and MSDS(s) for the proper handling of institutional materials/equipment associated with the use of this product.**Emergency overview** Warning!
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
SKIN, EYES, STOMACH.

Avoid contact with skin and clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Target organs Contains material which causes damage to the following organs: skin, eyes, stomach.**Routes of entry** Eye contact. Inhalation. Ingestion.**Potential acute health effects****Eyes** Irritating to eyes.**Skin** Irritating to skin.**Inhalation** Irritating to respiratory system.**Ingestion** No known significant effects or critical hazards.**Potential chronic health effects****Carcinogenic effects****CARCINOGENIC EFFECTS:** Classified None. by OSHA, None. by NIOSH [Trade Secret #2]. Classified None. by OSHA, None. by NIOSH [Trade Secret #1].**MUTAGENIC EFFECTS:** Classified PROVEN for human [Trade Secret #2]. Mutagenic for mammalian somatic cells. [Trade Secret #2]. Mutagenic for bacteria and/or yeast. [Trade Secret #2].**TERATOGENIC EFFECTS:** Classified SUSPECTED for human [Trade Secret #2].**Medical conditions aggravated by overexposure**

Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Continued on Next Page

Over-exposure signs/symptoms Not available.

Europe

Classification	Not classified.
<i>Physical/chemical hazards</i>	Not applicable.
<i>Human health hazards</i>	Not applicable.
<i>Environmental hazards</i>	Not applicable.

See toxicological Information (section 11)

+ Section 4. First aid measures

Notice to reader Get immediate medical attention.

Effects and symptoms

<i>Inhalation</i>	Not available.
<i>Ingestion</i>	Not available.
<i>Skin contact</i>	Sensitization of the product: Not available. Slightly hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
<i>Eye contact</i>	Slightly hazardous in case of eye contact (irritant).
<i>Aggravating conditions</i>	Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

First-Aid measures

<i>Inhalation</i>	If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
<i>Ingestion</i>	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 appear.
<i>Skin contact</i>	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
<i>Eye contact</i>	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
<i>Notes to physician</i>	Not available.
<i>Protection of first-aiders</i>	Not available.

Section 5. Fire fighting measures

<i>Flammability of the product</i>	Non-flammable.
<i>Flash Points</i>	Not applicable.
<i>Fire hazards in presence of various substances</i>	Not applicable.
<i>Fire fighting media and instructions</i>	Use an extinguishing agent suitable for surrounding fires.
<i>Protective clothing (fire)</i>	Not applicable.
<i>Hazardous thermal decomposition products</i>	Not applicable.

Section 6. Accidental release measures

<i>Personal precautions</i>	Safety glasses. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.
<i>Environmental precautions and clean-up methods</i>	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.
<i>Small spill and leak</i>	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Continued on Next Page

◇ Section 7. Handling and storage

Handling Wash thoroughly after handling.

Storage Keep container tightly closed. Keep container in a cool, well-ventilated area.

Intended Use Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

Packaging materials

Suitable / Not suitable Use original container.

Section 8. Exposure Controls, Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits.

Exposure Limit Values

Ingredient Name
United States

Occupational Exposure Limits

Personal Protection

Eyes Splash goggles.

Body Lab coat.

Hands Gloves.

Respiratory Respirator is not needed under normal and intended conditions of use, if exposures are kept below established limits.

Protective Clothing
(Pictograms)



🧪 Section 9. Physical and chemical properties

Physical State Liquid.

Color Colorless.

Odor Odorless.

Molecular weight Not applicable.

Taste Not available.

pH 5 [Acidic.]

Boiling/condensation point The lowest known value is 100°C (212°F) (water).

Melting/freezing point May start to solidify at 0°C (32°F) based on data for: water.

Critical temperature The lowest known value is 374.2°C (705.6°F) (water).

Specific Gravity The only known value is 1 (Water = 1) (water).

Vapor pressure The highest known value is 2.3 kPa (17.5 mm Hg) (at 20°C) (water).

Vapor density The highest known value is 0.62 (Air = 1) (water).

Evaporation rate 0.36 (water) compared to (n-BUTYL ACETATE=1)

Viscosity Dynamic: The highest known value is 1 cP (water)

Dispersion properties See solubility in water, methanol, acetone.

Solubility Easily soluble in cold water, hot water, methanol, acetone.

Continued on Next Page



Section 10. Stability and reactivity

- Stability and Reactivity** The product is stable.
- Conditions to avoid** Sodium azide may react with lead or copper plumbing to form highly explosive metal azides. (Trade Secret #4)
- Materials to avoid** Slightly reactive to reactive with oxidizing agents.
- Hazardous Decomposition Products** These products are halogenated compounds, hydrogen chloride.



Section 11. Toxicological information

- Toxicity to Animals water:**
- | | |
|-------------------------|---|
| ORAL (LD50): | Acute: >90000 mg/kg [Rat]. |
| Trade Secret #2: | |
| ORAL (LD50): | Acute: 3000 mg/kg [Rat]. 4000 mg/kg [Mouse]. |
| DERMAL (LD50): | Acute: >10000 mg/kg [Rabbit]. |
| DUST (LC50): | Acute: >42000 mg/m ³ 1 hour(s) [Rat]. |
| Trade Secret #1: | |
| ORAL (LD50): | Acute: >316 mg/kg [quail]. |
| Trade Secret #3: | |
| ORAL (LD50): | Acute: 1900 mg/kg [Mouse]. |
| Trade Secret #4: | |
| ORAL (LD50): | Acute: 27 mg/kg [Rat]. 27 mg/kg [Mouse]. 23.7 mg/kg [Birds.]. |
| DERMAL (LD50): | Acute: 20 mg/kg [Rabbit]. 50 mg/kg [Rat]. |

- Chronic Effects on Humans** **CARCINOGENIC EFFECTS:** Classified None. by OSHA, None. by NIOSH [Trade Secret #2]. Classified None. by OSHA, None. by NIOSH [Trade Secret #1].
- MUTAGENIC EFFECTS:** Classified PROVEN for human [Trade Secret #2]. Mutagenic for mammalian somatic cells. [Trade Secret #2]. Mutagenic for bacteria and/or yeast. [Trade Secret #2].
- TERATOGENIC EFFECTS:** Classified SUSPECTED for human [Trade Secret #2].
- DEVELOPMENTAL TOXICITY:** Classified Reproductive system/toxin/female [PROVEN] [Trade Secret #2]. Classified Development toxin [POSSIBLE] [Trade Secret #2].
- Contains material which causes damage to the following organs: skin, eyes, stomach.

- Other Toxic Effects on Humans** Slightly hazardous in case of eye contact (irritant).

- Special Remarks on Toxicity to Animals** Not available.

- Special Remarks on Chronic Effects on Humans** Exposure can cause stomach pains, vomiting and diarrhea. Embryotoxic and/or foetotoxic in animal. Laboratory experiments have shown mutagenic effects. May cause convulsions. (Trade Secret #2)

- Special Remarks on Other Toxic Effects on Humans** Exposure can cause nausea, headache and vomiting. Material is irritating to mucous membranes and upper respiratory tract. May cause convulsions. (Trade Secret #2)

- Carcinogenicity** No known significant effects or critical hazards.

- Mutagenicity** No known significant effects or critical hazards.

- Reproductive toxicity** No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Inhalation** No known significant effects or critical hazards.

- Ingestion** No known significant effects or critical hazards.

- Skin** No known significant effects or critical hazards.

- Target organs** Contains material which causes damage to the following organs: skin, eyes, stomach.



Section 12. Ecological information

<i>Mobility</i>	Not available.
<i>Persistence/degradability</i>	Not available.
<i>Bioaccumulative potential</i>	Not available.
<i>Ecotoxicity</i>	Not available.
<i>Germany water class</i>	VCI WGK: No products were found.

Ecotoxicity data

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
Trade Secret #2	Daphnia magna (EC50)	48 hour(s)	402.6 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	6094 mg/l
	Pimephales promelas (LC50)	96 hour(s)	6390 mg/l
	Pimephales promelas (LC50)	96 hour(s)	7050 mg/l
	Pimephales promelas (LC50)	96 hour(s)	7100 mg/l
	Pimephales promelas (LC50)	96 hour(s)	7200 mg/l

Other ecological information

Persistence/degradability

Ingredient name

BOD₅

COD

Ingredient name

Aquatic half-life

Photolysis

Bioaccumulative potential

Ingredient name

LogP_{ow}

BCF

<i>Mobility</i>	: Not available.
<i>Other adverse effects</i>	: No known significant effects or critical hazards.



Section 13. Disposal considerations

Waste Stream Not available.

Methods of disposal The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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.

European waste catalogue (EWC) Not available.

Hazardous waste To present knowledge of the supplier, this product is not regarded as hazardous waste as defined by EU Directive 91/689/EC.

Denmark – Carcinogenic waste Not available.

Denmark - Waste card number Not available.

Denmark - Waste group Not available.

Sweden - thermoset plastic waste Not available.

Sweden - Waste group Not available.

Austria - Waste catalogue Not available.

Norway - Waste number Not available.

Norway - Hazardous waste To present knowledge of the supplier, this product is not regarded as hazardous waste as defined by SFT's Directive on special waste.

Switzerland - Waste code Not available.

Continued on Next Page

Section 14. Transport information

Contact the supplier for all information regarding the proper transportation method for this material.

Section 15. Regulatory information

Label Requirements (Europe)

This product is not classified according to the EU regulations.

HCS Classification

Irritating material
Target organ effects

U.S. Federal Regulations TSCA 8(b) inventory: Trade Secret #4; Trade Secret #3; Trade Secret #2; Trade Secret #1; water

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: Trade Secret #2

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Trade Secret #2: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

Clean air act (CAA) 112 accidental release prevention: No products were found.

Clean air act (CAA) 112 regulated flammable substances: No products were found.

Clean air act (CAA) 112 regulated toxic substances: No products were found.

State regulations Pennsylvania RTK: Trade Secret #4: (environmental hazard, generic environmental hazard); Trade Secret #3: (environmental hazard, generic environmental hazard)
Florida: Trade Secret #4
Minnesota: Trade Secret #4
Massachusetts RTK: Trade Secret #4; Trade Secret #3
New Jersey: Trade Secret #4; Trade Secret #3

WHMIS (Canada) Class D-1B: Material causing immediate and serious toxic effects (TOXIC).
Class D-2A: Material causing other toxic effects (VERY TOXIC).

CEPA DSL: Trade Secret #4; Trade Secret #3; Trade Secret #2; Trade Secret #1; water

International Regulations

EINECS Not available.

DSCL (EEC) This product is not classified according to the EU regulations.

International Lists Australia (NICNAS): Trade Secret #4; Trade Secret #3; Trade Secret #2; Trade Secret #1; water

China: Trade Secret #4; Trade Secret #3; Trade Secret #2; Trade Secret #1; water

Germany water class: Trade Secret #4; Trade Secret #3; Trade Secret #2

Japan (METI): Trade Secret #4; Trade Secret #3; Trade Secret #2; water

Japan (MOL): Trade Secret #1

Korea (TCCL): Trade Secret #4; Trade Secret #3; Trade Secret #2; Trade Secret #1; water

Philippines (RA6969): Trade Secret #4; Trade Secret #3; Trade Secret #2; water

State Regulations Pennsylvania RTK: Trade Secret #4: (environmental hazard, generic environmental hazard); Trade Secret #3: (environmental hazard, generic environmental hazard)

Florida: Trade Secret #4

Minnesota: Trade Secret #4

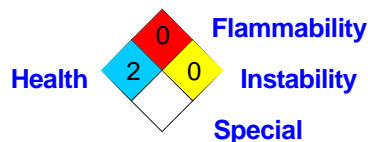
Massachusetts RTK: Trade Secret #4; Trade Secret #3

New Jersey: Trade Secret #4; Trade Secret #3

Section 16. Other information

Hazardous Material Information System (U.S.A.)	Health	*	1
	Fire hazard		0
	Reactivity		0
	Personal protection		C

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



References Not available.

History of Document Changes Any information changes since last document version are marked with a triangle symbol. ▶

Full text of R phrases referred to in sections 2 and 3 - Europe R36/37/38- Irritating to eyes, respiratory system and skin.

Full text of classifications referred to in sections 2 and 3 - Europe Xi - Irritant

Intended Use Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

Validated by MSDS_Specialist on 8/20/2007.

Verified by MSDS_Specialist.

Date of previous issue No Previous Validation

Printed 8/20/2007.

Version 0.01

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.