

Material Safety Data Sheet

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

Responsible Name MSDS Administrator

? Section 1. Chemical Product and Company IdentificationProduct Name **Restore™ Western Blot Stripping Buffer**

Product no. 21059 21062 1858564 1900410

Supplier	<i>In USA:</i> Thermo Fisher Scientific P.O. Box 117 Rockford, IL 61105 USA 815.968.0747 or 1.800.874.3723	<i>In Europe:</i> 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
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In case of emergency CHEMTREC:
800.424.9300
OUTSIDE US:
703.527.3887

Print date 6/28/2007

Validation date **6/28/2007**

MSDS# 3432

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

<u>Ingredient name</u>	<u>CAS number</u>	<u>%</u>	<u>EC number</u>	<u>Classification</u>
Ingredient Name #3		3 - 5		Xn; R20/21/22 C; R34 Xi; R37

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 Danger!
CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
RESPIRATORY TRACT, SKIN, EYES.
MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR IF SWALLOWED.
Do not ingest. Do not get in eyes, on skin or clothing. Do not breathe 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: upper respiratory tract, skin, eyes.

Routes of entry Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes Corrosive to eyes.

Skin Harmful in contact with skin. Corrosive to the skin.

Inhalation Corrosive to the respiratory system.

Ingestion Harmful if swallowed. May cause burns to mouth, throat and stomach.

Potential chronic health effects

Carcinogenic effects **CARCINOGENIC EFFECTS:** Classified None. by OSHA, None. by NIOSH [Ingredient Name #3]. Classified None. by OSHA, None. by NIOSH [Ingredient Name #1].

MUTAGENIC EFFECTS: Classified PROVEN for human [Ingredient Name #1].

TERATOGENIC EFFECTS: Not available.

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Medical conditions aggravated by overexposure Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

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

Not available.

Europe

Classification Not classified.

Physical/chemical hazards Not applicable.

Human health hazards Not applicable.

Environmental hazards Not applicable.

See toxicological Information (section 11)

+ Section 4. First aid measures

Notice to reader Get immediate medical attention.

Effects and symptoms

Inhalation Slightly hazardous in case of inhalation (lung irritant). Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Over-exposure by inhalation may cause respiratory irritation.

Ingestion May be fatal if swallowed. May cause burns to mouth, throat and stomach.

Skin contact Sensitization of the product: Not available.
Slightly hazardous in case of skin contact (corrosive, irritant). Skin contact may produce burns. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Eye contact Slightly hazardous in case of eye contact (irritant, corrosive).

Aggravating conditions Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. 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

Inhalation If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.

Ingestion 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.

Skin contact 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.

Eye contact In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Notes to physician Not available.

Protection of first-aiders Not available.

 Section 5. Fire fighting measures

Flammability of the product Non-flammable.

Flash Points Not applicable.

Fire hazards in presence of various substances Not applicable.

Fire fighting media and instructions Use an extinguishing agent suitable for surrounding fires.

Protective clothing (fire) Not applicable.

Hazardous thermal decomposition products Not applicable.

Section 6. Accidental release measures

Personal precautions Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Environmental precautions and clean-up methods Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. **Neutralize the residue with a dilute solution of sodium carbonate.** Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Small spill and leak Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: **Neutralize the residue with a dilute solution of sodium carbonate.** Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

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	
<u>Ingredient Name</u>	<u>Occupational Exposure Limits</u>
United States	

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.

Feet Boots.

Protective Clothing (Pictograms)



Section 9. Physical and chemical properties

Physical State Liquid. (Clear sparkling liquid.)

Color Colorless.

Odor Not available.

Molecular weight Not applicable.

Taste Not available.

pH 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.

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- Critical temperature** The lowest known value is 374.2°C (705.6°F) (water).
- Specific Gravity** Weighted average: 1.01 (Water = 1)
- 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.
Very slightly soluble in diethyl ether.

 **Section 10. Stability and reactivity**

- Stability and Reactivity** The product is stable.
- Conditions to avoid** Not available.
- Materials to avoid** Slightly reactive to reactive with oxidizing agents.
- Hazardous polymerization** Will not occur.
- 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].
- Ingredient Name #1:**
 - ORAL (LD50): Acute: 7930 mg/kg [Rat]. 4920 mg/kg [Mouse].
- Ingredient Name #3:**
 - ORAL (LD50): Acute: 3500 mg/kg [Rat].
 - DERMAL (LD50): Acute: 3000 mg/kg [Rabbit].

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Classified None. by OSHA, None. by NIOSH [Ingredient Name #1]. Classified None. by OSHA, None. by NIOSH [Ingredient Name #3].
MUTAGENIC EFFECTS: Classified PROVEN for human [Ingredient Name #1].
Contains material which causes damage to the following organs: upper respiratory tract, skin, eyes.

Other Toxic Effects on Humans Slightly hazardous in case of eye contact (irritant), of inhalation (lung irritant).

Special Remarks on Toxicity to Animals Not available.

Special Remarks on Chronic Effects on Humans Not available.

Special Remarks on Other Toxic Effects on Humans Prolonged contact can cause severe irritation or even burns. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Exposure can cause lung irritation, chest pain and oedema which may be fatal. Exposure can cause nausea, headache and vomiting. (Ingredient Name #3)

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: upper respiratory tract, skin, eyes.



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>
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Other ecological information

Persistence/degradability

<u>Ingredient name</u>	<u>BOD₅</u>	<u>COD</u>
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<u>Ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>
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Bioaccumulative potential

<u>Ingredient name</u>	<u>LogP_{ow}</u>	<u>BCF</u>
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<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.

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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 **Corrosive material**
Target organ effects

U.S. Federal Regulations TSCA: No products were found.
 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 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 No products were found.

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

CEPA DSL: Ingredient Name #1; water

International Regulations

EINECS Not available.

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

International Lists Australia (NICNAS): Ingredient Name #1; water

China: water

Germany water class: Ingredient Name #1; Ingredient Name #3

Korea (TCCL): Ingredient Name #1; water

Philippines (RA6969): Ingredient Name #1; water

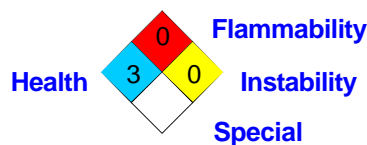
State Regulations No products were found.

Section 16. Other information

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

Health	*	3
Fire hazard		0
Reactivity		0
Personal protection		C

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



References Not available.

Restore™ Western Blot Stripping Buffer

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 R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R34- Causes burns.
R37- Irritating to respiratory system.

Full text of classifications referred to in sections 2 and 3 - Europe C - Corrosive
Xn - Harmful
Xi - Irritant

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

Validated by MSDS Administrator on 6/28/2007.

Verified by MSDS Administrator.

Date of previous issue

11/1/2006

Printed 6/28/2007.

Version

1.03

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.