

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** Phosphoprotein Enrichment Column**Product no.** 1861111**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#** 7831**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 #1		10 - 20		F; R11

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!
BIRTH DEFECT HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE BIRTH DEFECT.
CAUSES SEVERE EYE IRRITATION.
CAUSES RESPIRATORY TRACT AND SKIN IRRITATION.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
BLOOD, KIDNEYS, NERVOUS SYSTEM, REPRODUCTIVE SYSTEM, LIVER, HEART,
RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR
CORNEA.
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.

Avoid contact with skin and clothing. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. Avoid exposure during pregnancy.

Target organs Contains material which causes damage to the following organs: blood, kidneys, the nervous system, the reproductive system, liver, heart, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.**Routes of entry** Eye contact. Inhalation. Ingestion.**Potential acute health effects****Eyes** Severely irritating to the eyes.**Skin** Irritating to skin.**Inhalation** Irritating to respiratory system.**Ingestion** No known significant effects or critical hazards.**Continued on Next Page**

Phosphoprotein Enrichment Column

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Potential chronic health effects

Carcinogenic effects **CARCINOGENIC EFFECTS:** Classified None. by NIOSH [Trade Secret #1]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Trade Secret #1].
MUTAGENIC EFFECTS: Classified PROVEN for human [Trade Secret #1]. Mutagenic for mammalian somatic cells. [Trade Secret #1].
TERATOGENIC EFFECTS: Classified PROVEN for human [Trade Secret #1].

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.
Over-exposure signs/symptoms 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.

Ingestion Hazardous in case of ingestion.

Skin contact Irritation of the product in case of skin contact: Not available. Sensitization of the product: Not available.

Eye contact Not available.

Aggravating conditions 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 Flammable.

Flash Points The lowest known value is Closed cup: 13°C (55.4°F). Open cup: 13°C (55.4°F). (Trade Secret #1)

Fire hazards in presence of various substances Highly flammable in presence of open flames, sparks and static discharge, of heat.

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

Protective clothing (fire) Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards May form explosive mixtures with air. (Trade Secret #1)

Hazardous thermal decomposition products These products are carbon oxides (CO, CO₂).

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Section 6. Accidental release measures

Personal precautions Safety glasses. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Environmental precautions and clean-up methods Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. 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. 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.

Czech Republic - Storage code |

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. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Exposure Limit Values

Ingredient Name

United States

Trade Secret #1

Occupational Exposure Limits

ACGIH TLV (United States, 2000).
TWA: 1880 mg/m³ 8 hour(s).

NIOSH REL (United States, 2000).
TWA: 1900 mg/m³ 10 hour(s).

OSHA PEL (United States, 1971).
TWA: 1900 mg/m³ 8 hour(s).

OSHA (United States, 0/1989).
CEIL: 7600 ppm

OSHA PEL 1989 (United States, 1989).
TWA: 1900 mg/m³ 8 hour(s).

MSHA (United States).
TWA: 1900 mg/m³

NIOSH (United States, 0/1994).
TWA: 1000 ppm
TWA: 1900 mg/m³

OSHA (United States, 0/1989).
TWA: 1000 ppm
TWA: 1900 mg/m³

ACGIH (United States, 0/1996).
TWA: 1880 mg/m³
TWA: 1000 ppm

ACGIH TLV (United States, 1/2006).
TWA: 1880 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

NIOSH REL (United States, 12/2001).
TWA: 1900 mg/m³ 10 hour(s).
TWA: 1000 ppm 10 hour(s).

OSHA PEL (United States, 11/2006).
TWA: 1900 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

OSHA PEL 1989 (United States, 3/1989).

Continued on Next Page

Sweden

Trade Secret #1

TWA: 1900 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

AFS (Sweden, 0/1996).

KTV: 1900 mg/m³
NGV: 1000 mg/m³
KTV: 1900 mg/m³ 15 minute(s).
KTV: 1000 ppm 15 minute(s).
NGV: 1000 mg/m³ 8 hour(s).
NGV: 500 ppm 8 hour(s).

Denmark

Trade Secret #1

DK-Arbejdstilsynet (Denmark, 0/1996).

GV: 1900 mg/m³

Arbejdstilsynet (Denmark, 4/2005).

GV: 1900 mg/m³ 8 hour(s).
GV: 1000 ppm 8 hour(s).

Norway

Trade Secret #1

Arbejdstilsynet (Norway, 10/2003).

AN: 950 mg/m³ 8 hour(s).
AN: 500 ppm 8 hour(s).

France

Trade Secret #1

INRS (France, 0/1996).

VME: 1900 mg/m³
VLE: 9500 mg/m³
VLE: 9500 mg/m³ 15 minute(s).
VLE: 5000 ppm 15 minute(s).
VME: 1900 mg/m³ 8 hour(s).
VME: 1000 ppm 8 hour(s).

Netherlands

Trade Secret #1

Arbeidsinspectie (Netherlands, 0/1999).

TGG: 1000 mg/m³

Germany

Trade Secret #1

ACGIH (Germany, 0/1996).

TWA: 1000 ppm

MAK-Werte Liste (Germany, 7/2006).

Spitzenbegrenzung: 1920 mg/m³ 4 times per shift, 15 minute(s).
Spitzenbegrenzung: 1000 ppm 4 times per shift, 15 minute(s).
TWA: 960 mg/m³ 8 hour(s).
TWA: 500 ppm 8 hour(s).

TRGS900 AGW (Germany, 1/2006).

Spitzenbegrenzung: 1920 mg/m³ 15 minute(s).
Spitzenbegrenzung: 1000 ppm 15 minute(s).
TWA: 960 mg/m³ 8 hour(s).
TWA: 500 ppm 8 hour(s).

Finland

Trade Secret #1

Työterveyslaitos (Finland, 0/1998).

TWA: 1900 mg/m³
STEL: 2500 mg/m³

Työterveyslaitos, Sosiaali- ja terveysministeriö (Finland, 4/2005).

STEL: 2500 mg/m³ 15 minute(s).
STEL: 1300 ppm 15 minute(s).
TWA: 1900 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

United Kingdom (UK)

Trade Secret #1

EH40-WEL (United Kingdom (UK), 9/2006).

TWA: 1920 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

Austria

Trade Secret #1

AUVA (Austria, 0/1995).

TWA: 1900 mg/m³
Spitzenbegrenzung: 3800 mg/m³

GKV_MAK (Austria, 6/2006).

Spitzenbegrenzung: 3800 mg/m³ 3 times per shift, 60 minute(s).
Spitzenbegrenzung: 2000 ppm 3 times per shift, 60 minute(s).
TWA: 1900 mg/m³ 8 hour(s).
TWA: 1000 ppm 8 hour(s).

Switzerland

Trade Secret #1

Belgium

Trade Secret #1

Spain

Trade Secret #1

Turkey

Trade Secret #1

Czech Republic

Trade Secret #1

Ireland

Trade Secret #1

SUVA (Switzerland, 2/2005). Notes: not temporaryKurzezeitsgrenzwerte: 1920 mg/m³ 15 minute(s).

Kurzezeitsgrenzwerte: 1000 ppm 15 minute(s).

MAK: 960 mg/m³ 8 hour(s).

MAK: 500 ppm 8 hour(s).

TWA: 1907 mg/m³**Lijst Grenswaarden / Valeurs Limites (Belgium, 3/2006).**

TWA: 1000 ppm 8 hour(s).

TWA: 1907 mg/m³ 8 hour(s).**INSHT (Spain, 1/2006).**VLA-ED: 1910 mg/m³ 8 hour(s).

VLA-ED: 1000 ppm 8 hour(s).

NIOSH REL (United States, 2000).TWA: 1900 mg/m³ 10 hour(s).**NIOSH (United States, 0/1994).**

TWA: 1000 ppm

TWA: 1900 mg/m³**NIOSH REL (United States, 12/2001).**TWA: 1900 mg/m³ 10 hour(s).

TWA: 1000 ppm 10 hour(s).

178/2001 (Czech Republic, 6/2004).STEL: 3000 mg/m³ 10 minute(s).

STEL: 1596 ppm 10 minute(s).

TWA: 1000 mg/m³ 8 hour(s).

TWA: 532 ppm 8 hour(s).

NAOSH (Ireland, 3/2002).OELV: 1900 mg/m³ 8 hour(s).

OELV: 1000 ppm 8 hour(s).

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. (Gel Slurry)**Color** Not available.**Odor** Not available.**Molecular weight** Not applicable.**Taste** Not available.**pH** Neutral.**Boiling/condensation point** The lowest known value is 78.5°C (173.3°F) (Trade Secret #1). Weighted average: 95.22°C (203.4°F)**Melting/freezing point** May start to solidify at 0°C (32°F) based on data for: water. Weighted average: -25.39°C (-13.7°F)**Critical temperature** The lowest known value is 374.2°C (705.6°F) (water).**Specific Gravity** Weighted average: 0.94 (Water = 1)**Vapor pressure** The highest known value is 5.9 kPa (44.6 mm Hg) (at 20°C) (Trade Secret #1). Weighted average: 3.1 kPa (23.25 mm Hg) (at 20°C)**Vapor density** The highest known value is 1.6 (Air = 1) (Trade Secret #1). Weighted average: 0.84 (Air = 1)**Odor threshold** The lowest known value is 180 ppm (Trade Secret #1)**Evaporation rate** 1.7 (Trade Secret #1) compared to Butyl acetate.

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Viscosity Dynamic: The highest known value is 1.2 cP (Trade Secret #1) Weighted average: 1.04 cP

Dispersion properties See solubility in water, methanol, acetone.

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

Flash point The lowest known value is Closed cup: 13°C (55.4°F). Open cup: 13°C (55.4°F). (Trade Secret #1)

Explosion limits The greatest known range is Lower: 3.3% Upper: 19% (Trade Secret #1)



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 Decomposition Products Not available.



Section 11. Toxicological information

Toxicity to Animals

water:

ORAL (LD50):

Acute: >90000 mg/kg [Rat].

Trade Secret #1:

ORAL (LD50):

Acute: 7060 mg/kg [Rat]. 6300 mg/kg [Rabbit]. 3450

mg/kg [Mouse].

VAPOR (LC50):

Acute: 20000 ppm 10 hour(s) [Rat]. 39000 mg/m³ 4 hour

(s) [Mouse].

Sepharose 6B

LD50: Not available.

LC50: Not available.

Trade Secret #3

LD50: Not available.

LC50: Not available.

Chronic Effects on Humans

CARCINOGENIC EFFECTS: Classified None. by NIOSH [Trade Secret #1]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Trade Secret #1].

MUTAGENIC EFFECTS: Classified PROVEN for human [Trade Secret #1]. Mutagenic for mammalian somatic cells. [Trade Secret #1].

TERATOGENIC EFFECTS: Classified PROVEN for human [Trade Secret #1].

DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Development toxin [PROVEN] [Trade Secret #1]. Classified Reproductive system/toxin/male [SUSPECTED] [Trade Secret #1].

Contains material which causes damage to the following organs: blood, kidneys, the nervous system, the reproductive system, liver, heart, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.

Other Toxic Effects on Humans

Hazardous in case of ingestion.

Slightly hazardous in case of inhalation.

Special Remarks on Toxicity to Animals

Not available.

Special Remarks on Chronic Effects on Humans

To the best of our knowledge, the toxicological properties of this substance have not been thoroughly investigated.

Special Remarks on Other Toxic Effects on Humans

Exposure can cause nausea, headache and vomiting. Moderately toxic and narcotic in high concentrations. EXTREMELY FLAMMABLE. Keep away from sources of ignition. Material is irritating to mucous membranes and upper respiratory tract. (Trade Secret #1)

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: blood, kidneys, the nervous system, the reproductive system, liver, heart, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.



Section 12. Ecological information

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

Ecotoxicity data

<u>Ingredient name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>
Trade Secret #1	Daphnia magna (EC50)	48 hour(s)	2 mg/l
	Daphnia magna (EC50)	48 hour(s)	9.3 mg/l
	Daphnia magna (EC50)	48 hour(s)	>100 mg/l
	Daphnia magna (LC50)	96 hour(s)	>100 mg/l
	Pimephales promelas (LC50)	96 hour(s)	15300 mg/l
	Oncorhynchus mykiss (LC50)	96 hour(s)	10400 mg/l

Other ecological information

<u>Ingredient name</u>	<u>BOD₅</u>	<u>COD</u>	<u>Biodegradability</u>
Trade Secret #1	-	-	Readily

<u>Ingredient name</u>	<u>Aquatic half-life</u>	<u>Photolysis</u>	<u>Biodegradability</u>
Trade Secret #1	-	-	Readily

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

Mobility : Not available.
Other adverse effects : 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.

Continued on Next Page

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.

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 Flammable liquid
Irritating material
Target organ effects

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

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 #1
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Trade Secret #1: Fire hazard, 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 Rhode Island RTK hazardous substances: Trade Secret #1
Pennsylvania RTK: Trade Secret #1: (generic environmental hazard)
Minnesota: Trade Secret #1
Massachusetts RTK: Trade Secret #1
New Jersey: Trade Secret #1

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>	<u>No significant risk level</u>	<u>Maximum acceptable dosage level</u>
Trade Secret #1	No.	Yes.	No.	No.

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

CEPA DSL: water; Trade Secret #1

International Regulations

EINECS Not available.

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

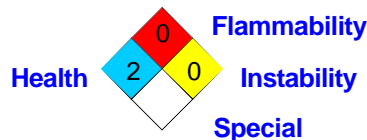
International Lists Australia (NICNAS): water; Trade Secret #1
China: water; Trade Secret #1
Germany water class: Trade Secret #1
Japan (METI): water; Trade Secret #1
Korea (TCCL): water; Trade Secret #1
Philippines (RA6969): water; Trade Secret #1

State Regulations Rhode Island RTK hazardous substances: Trade Secret #1
 Pennsylvania RTK: Trade Secret #1: (generic environmental hazard)
 Minnesota: Trade Secret #1
 Massachusetts RTK: Trade Secret #1
 New Jersey: Trade Secret #1

Section 16. Other information

Hazardous Material Information System (U.S.A.)	Health *	2
	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 R11- Highly flammable.

Full text of classifications referred to in sections 2 and 3 - Europe F - Highly flammable

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 8/20/2007

Printed 8/20/2007.

Version 0.02

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.