

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

Responsible Name Pierce Administration

? **Section 1. Chemical Product and Company Identification**

Product name **Halt™ Protease Inhibitor Cocktail, EDTA-Free**

Product No. 0078415

Supplier	<i>In USA:</i> Pierce 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 Biotechnology P.O. Box 117 Rockford, IL 61105 USA 815.968.0747 or 1.800.874.3723
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In Case of Emergency CALL CHEMTREC:
800.424.9300
OUTSIDE US:
202.483.7616

Print Date 11/8/2002
Validation Date **11/6/2002**
MSDS# 3598

Intended Use 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 No.</u>	<u>%</u>	<u>EC Number</u>	<u>Symbol</u>	<u>R-Phrases</u>
1) Dimethyl Sulfoxide (DMSO)	67-68-5	10-20	200-664-3	Xn	R36/37/38, R42

 **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!

CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
LUNGS, GASTROINTESTINAL TRACT, SKIN, EYES, EYE, LENS OR CORNEA.
MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
MAY CAUSE ALLERGIC RESPIRATORY REACTION.
COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FIRE.

Keep away from heat, sparks and flame. Avoid contact with eyes, skin and clothing. Do not breathe vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of Entry Absorbed through skin. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation (lung irritant, lung sensitizer). Slightly hazardous in case of ingestion, .

Carcinogenic Effects Data **CARCINOGENIC EFFECTS:** Classified None., 4 (No evidence.) by NTP, None. by NIOSH [Dimethyl Sulfoxide (DMSO)].

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.

Overexposure /Signs/Symptoms Not available.

Europe

Classification R42

Physical/chemical hazards Not applicable.

Human health hazards May cause sensitization by inhalation.

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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 Hazardous in case of inhalation (lung irritant, lung sensitizer).

Ingestion Slightly hazardous in case of ingestion.

Skin Contact Sensitization of the product: Not available.

Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Eye Contact Hazardous in case of eye contact (irritant).

Aggravating conditions Repeated or prolonged exposure is not known to aggravate medical condition.

First-Aid Measures

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. 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. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Skin Contact In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Notes to Physician Not available.

Protection of first-aiders Not available.

🔥 Section 5. Fire Fighting Measures

Flammability of the Product Combustible.

Flash Points The lowest known value is CLOSED CUP: 89°C (192.2°F). OPEN CUP: 94.9°C (202.8°F). (Dimethyl Sulfoxide (DMSO))

Fire Hazards in Presence of Various Substances Not available.

Fire Fighting Media and Instructions SMALL FIRE: Use DRY chemical powder.

LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Protective Clothing (Fire) Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards Combustible when exposed to heat or flame.

Upon heating above 100C (212 F), sulfur dioxide is emitted.

When DMSO undergoes hazardous thermo-oxidative degradation it may produce formaldehyde, methyl mercaptan, and sulfur dioxide. (Dimethyl Sulfoxide (DMSO))

Hazardous thermal (de)composition products These products are carbon oxides (CO, CO₂), sulfur oxides (SO₂, SO₃...).

Section 6. Accidental Release Measures

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

Environmental Precautions and Combustible material.

Clean-up Methods Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Small Spill and Leak Absorb with an inert material and put the spilled material in an appropriate waste disposal.

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Section 7. Handling and Storage

Handling Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire, minimize ignition sources.

Storage Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

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

Exposure Limit Values

Ingredient Name

Occupational Exposure Limits

United States

1) Dimethyl Sulfoxide (DMSO)

Not available.

Sweden

1) Dimethyl Sulfoxide (DMSO)

TWA: 50 CEIL: 150 (ppm) from AFS [Sweden] [1996] SKIN

Denmark

1) Dimethyl Sulfoxide (DMSO)

Not available.

Norway

1) Dimethyl Sulfoxide (DMSO)

Not available.

France

1) Dimethyl Sulfoxide (DMSO)

Not available.

Netherlands

1) Dimethyl Sulfoxide (DMSO)

TWA: 50 (ppm) from Arbeidsinspectie [Netherlands] [2000] Inhalation

Germany

1) Dimethyl Sulfoxide (DMSO)

TWA: 160 (mg/m³) from BAuA [Germany] [1999] SKIN

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 and Appearance Liquid.

Odor Not available.

Molecular Weight Not applicable.

Taste Not available.

Boiling/Condensation Point The lowest known value is 189°C (372.2°F) (Dimethyl Sulfoxide (DMSO)).

Color Clear

Melting/Freezing Point May start to solidify at 18.5°C (65.3°F) based on data for: Dimethyl Sulfoxide (DMSO).

Specific Gravity The only known value is 1.1 (Water = 1) (Dimethyl Sulfoxide (DMSO)).

Vapor Pressure The highest known value is 0.1 kPa (@ 20°C) (Dimethyl Sulfoxide (DMSO)).

Vapor Density The highest known value is 2.7 (Air = 1) (Dimethyl Sulfoxide (DMSO)).

Volatility 100% (v/v). (Dimethyl Sulfoxide (DMSO)).

Evaporation Rate 0.026 (Dimethyl Sulfoxide (DMSO)) compared to (n-BUTYL ACETATE=1)

VOC 100 (%)

Dispersion Properties Not available.

Solubility Not available.



Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Conditions to avoid Not available.

Materials to avoid Not available.

Hazardous Decomposition Products These products are carbon oxides (CO, CO₂), sulfur oxides (SO₂, SO₃...).



Section 11. Toxicological Information

Toxicity to Animals Acute oral toxicity (LD₅₀): 667 mg/kg (wild bird species) (Calculated value for the mixture).

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Classified None., 4 (No evidence.) by NTP, None. by NIOSH [Dimethyl Sulfoxide (DMSO)].

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

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 Contains neurotoxic agents.



Section 12. Ecological Information

Mobility Not available.

Persistence/degradability Not available.

Bioaccumulative potential Not available.

Ecotoxicity Not available.

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Germany water class VCI WGK: No products were found.



Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste Stream Not available.

Consult your local or regional authorities.



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)

R42- May cause sensitization by inhalation.

S2- Keep out of the reach of children.

S23- Do not breathe gas/fumes/vapour/spray [***]

S46- If swallowed, seek medical advice immediately and show this container or label.



Harmful

HCS Classification **Toxic. Irritating substance.**

U.S. Federal Regulations TSCA 8(b) inventory: Dimethyl Sulfoxide (DMSO)

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: Dimethyl Sulfoxide (DMSO)

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Dimethyl Sulfoxide (DMSO): immediate health hazard, delayed health hazard

SARA 313 toxic chemical notification and release reporting: 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.

WHMIS (Canada) CLASS B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

CEPA DSL: Dimethyl Sulfoxide (DMSO)

International Regulations

EINECS Not available.

DSCL (EEC) R42- May cause sensitization by inhalation.

International Lists

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Australia: Dimethyl Sulfoxide (DMSO)
 Australia (NICNAS): Dimethyl Sulfoxide (DMSO)
 Germany water class: Dimethyl Sulfoxide (DMSO)
 Korea (TCCL): Dimethyl Sulfoxide (DMSO)
 Philippines (RA6969): Dimethyl Sulfoxide (DMSO)

State Regulations No products were found.

California prop. 65: No products were found.

Section 16. Other Information

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

Health	*	1
Fire Hazard		2
Reactivity		0
Personal Protection		h

**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 Irritating to eyes, respiratory system and skin.
referenced under headings 2 and 3: May cause sensitization by inhalation.

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

Validated by Pierce Administration on 11/6/2002.

Verified by Pierce Administration.

Date of Previous Issue No Previous
Validation

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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.