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**1. IDENTIFICATION**

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<b>Product Name</b>	Halt Protease Inhibitor Cocktail
<b>Recommended use of the chemical and restrictions on use</b>	
<b>Identified Uses</b>	For Research and Development Use Only
<b>Product Numbers</b>	190222
<b>Company Identification</b>	Covaris, Inc. 14 Gill Street, Unit H Woburn, MA 01801
<b>Customer Information Number</b>	(781) 932-3959
<b>Emergency Telephone Number</b>	(800) 424-9300 (for emergencies only)
<b>Chemtrec Number</b>	(800) 424-9300
<b>Issue Date</b>	October 31, 2013
<b>Supersedes Date</b>	

*Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)*

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**2. HAZARD IDENTIFICATION**

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**Hazard Classification**

Serious eye damage/eye irritation - Category 2A  
Skin corrosion/irritation - Category 2

**Label Elements**

Hazard Symbols



Signal Word: Warning

**Hazard Statements**

Causes serious eye irritation.  
Causes skin irritation.

**Precautionary Statements****Prevention**

Wear eye/face protection.  
Wear protective gloves.  
Wash hands thoroughly after handling.

**Response**

If skin irritation occurs, get medical advice/attention.  
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists, get medical advice/attention.  
Take off contaminated clothing and wash it before reuse.  
If on skin: wash with plenty of soap and water.

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**2. HAZARD IDENTIFICATION**

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**Storage**

None

**Disposal**

Dispose of contents/container in accordance with local regulation.

**Other Hazards**

None

**Specific Concentration Limits**

The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	0 - 10%
Acute dermal toxicity	0 - 10%
Acute inhalation toxicity	90 - 100%
Acute aquatic toxicity	0 - 10%

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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This product is a mixture.

<b>Component</b>	<b>CAS Number</b>	<b>Concentration</b>
Dimethyl sulfoxide	67-68-5	80 – 95%
Benzenesulfonyl fluoride, 4-(2-aminoethyl)-hydrochloride	30827-99-7	1 – 10%

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**4. FIRST- AID MEASURES**

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**Description of necessary first-aid measures****Eyes**

Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.

**Skin**

Wash affected area with plenty of water. Seek medical attention if symptoms persist.

**Ingestion**

Do not induce vomiting. Have victim drink 1-3 glasses of water to dilute stomach contents. Never administer anything by mouth if a victim is losing consciousness, is unconscious or is convulsing. Obtain medical attention immediately.

**Inhalation**

Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention if symptoms persist.

**Most important symptoms/effects, acute and delayed**

Aside from the information found under description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

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**4. FIRST- AID MEASURES**

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**Indication of immediate medical attention and special treatment needed**

**Notes to Physicians**

Treat symptomatically.

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**5. FIRE - FIGHTING MEASURES**

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**Suitable (and unsuitable) Extinguishing Media**

Use foam, dry chemical or carbon dioxide. Use water spray for surroundings and containers.

**Specific hazards arising from the chemical**

None known.

**Special Protective Actions for Fire-Fighters**

Wear full protective clothing and self-contained breathing apparatus.

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**6. ACCIDENTAL RELEASE MEASURES**

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**Personal precautions, protective equipment and emergency procedures**

Wear appropriate protective clothing.

**Environmental Precautions**

Prevent the material from entering drains or watercourses. Notify authorities if spill has entered watercourse or sewer or has contaminated soil or vegetation.

**Methods and materials for containment and cleaning up**

Contain and absorb using earth, sand or other inert material. Transfer into suitable containers for recovery or disposal.

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**7. HANDLING AND STORAGE**

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**Precautions for safe handling**

Wear appropriate protective equipment when handling. Do not eat or drink while handling this material. Avoid contact with eyes, skin and clothing.

**Conditions for safe storage**

Store at 2 - 8°C (35.6 - 46.4°F). Keep container tightly closed when not in use. Storage area should be: cool - dry - well ventilated - out of direct sunlight - away from sources of ignition (heat, sparks, flames, pilot lights) - away from incompatible materials (see Section 10)

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Control parameters**

Exposure limits are listed below, if they exist.

**Benzenesulfonyl fluoride, 4-(2-aminoethyl)- hydrochloride**

None established

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Appropriate engineering controls**

Use engineering methods to prevent or control exposure. Methods include process or personnel enclosure, mechanical ventilation (dilution and local exhaust), and control of process conditions.

**Individual protection measures****Respiratory Protection**

Respiratory protection not normally required.

**Skin Protection**

Chemical resistant gloves

**Eye/Face Protection**

Chemical goggles or safety glasses with side shields

**Body Protection**

Normal work wear.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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**Appearance**

<b>Physical State</b>	Liquid
<b>Color</b>	Clear
<b>Odor</b>	Odorless
<b>Odor Threshold</b>	No data available
<b>pH</b>	No data available
<b>Specific Gravity</b>	No data available
<b>Boiling Range/Point (°C/F)</b>	No data available
<b>Melting Point (°C/F)</b>	No data available
<b>Flash Point (PMCC) (°C)</b>	>100°C
<b>Vapor Pressure</b>	No data available
<b>Evaporation Rate (BuAc=1)</b>	No data available
<b>Solubility in Water</b>	Soluble
<b>Vapor Density (Air = 1)</b>	No data available
<b>VOC (g/l)</b>	No data available
<b>Partition coefficient (n-octanol/water)</b>	No data available
<b>Viscosity</b>	No data available
<b>Auto-ignition Temperature</b>	No data available
<b>Decomposition Temperature</b>	No data available
<b>Upper explosive limit</b>	No data available
<b>Lower explosive limit</b>	No data available
<b>Flammability (solid, gas)</b>	Not applicable

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**10. STABILITY AND REACTIVITY**

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**Reactivity**

No known reactivity.

**Chemical Stability**

Stable under normal conditions.

**Possibility of hazardous reactions**

Hazardous polymerization will not occur.

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**10. STABILITY AND REACTIVITY**

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**Conditions to Avoid**

Heat - high temperatures

**Incompatible Materials**

Strong oxidizing agents - acids - bases

**Hazardous Decomposition Products**

Oxides of carbon - nitrogen oxides - sulfur oxides - hydrogen chloride gas - hydrogen fluoride - halogenated compounds

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**11. TOXICOLOGICAL INFORMATION**

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**Acute Toxicity**Dimethyl Sulfoxide

Oral LD50 (rat) >5000 mg/kg

Dermal LD50 (rabbit) >5000 mg/kg

Benzenesulfonyl fluoride, 4-(2-aminoethyl)- hydrochloride

Oral LD50 (mouse) 2834 mg/kg

**Specific Target Organ Toxicity (STOT) – single exposure**

Dimethyl sulfoxide: Available data indicates this component will not cause target organ effects after a single exposure.

Benzenesulfonyl fluoride, 4-(2-aminoethyl) - hydrochloride: No data available to this component will cause target organ effects after single exposure.

**Specific Target Organ Toxicity (STOT) – repeat exposure**

Dimethyl sulfoxide: Available data indicates this component will not cause target organ effects after repeated exposure.

Benzenesulfonyl fluoride, 4-(2-aminoethyl) - hydrochloride: No data available to indicate this component will cause target organ effects after repeated exposure.

**Serious Eye damage/Irritation**

Dimethyl sulfoxide: Slightly irritating in rabbit studies.

Benzenesulfonyl fluoride, 4-(2-aminoethyl) - hydrochloride: Available data indicates that this component causes serious eye damage.

**Skin Corrosion/Irritation**

Dimethyl sulfoxide: Slightly irritating in rabbit studies.

Benzenesulfonyl fluoride, 4-(2-aminoethyl) - hydrochloride: Available data indicates that this component causes severe skin burns.

**Respiratory or Skin Sensitization**

Dimethyl sulfoxide: Not sensitizing in guinea pig studies (skin).

Benzenesulfonyl fluoride, 4-(2-aminoethyl)- hydrochloride: No data available to indicate this component may cause skin or respiratory sensitization.

**Carcinogenicity**

Dimethyl sulfoxide: Not considered carcinogenic by IARC, NTP or OSHA.

Benzenesulfonyl fluoride, 4-(2-aminoethyl) - hydrochloride: No data available to indicate product may present a carcinogenic hazard.

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**11. TOXICOLOGICAL INFORMATION**

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**Germ Cell Mutagenicity**

Dimethyl sulfoxide: Available data indicates this component is not mutagenic.

Benzenesulfonyl fluoride, 4-(2-aminoethyl) - hydrochloride: No data available to indicate this component is mutagenic or genotoxic.

**Reproductive Toxicity**

Dimethyl sulfoxide: Available data indicates this component will not cause reproductive toxicity or birth defects.

Benzenesulfonyl fluoride, 4-(2-aminoethyl) - hydrochloride: No data available to indicate this component may cause reproductive toxicity or birth defects.

**Aspiration Hazard**

No data available to indicate product is an aspiration hazard.

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**12. ECOLOGICAL INFORMATION**

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**Ecotoxicity**

Dimethyl sulfoxide

LC50 (fathead minnow) 34,000 mg/l 96 hr

EC50 (daphnia pulex) 27,500 mg/l 48 hr

**Mobility in soil**

No relevant studies identified.

**Persistence/Degradability**

No relevant studies identified.

**Bioaccumulative Potential**

No relevant studies identified.

**Other adverse effects**

No relevant studies identified.

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**13. DISPOSAL CONSIDERATIONS**

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**Disposal Methods**

Dispose of in accordance with all applicable local and national regulations.

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**14. TRANSPORT INFORMATION**

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Contact supplier for transport information.

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**15. REGULATORY INFORMATION**

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**United States TSCA Inventory**

Components of this product have not been verified for the inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

**Canada DSL Inventory**

Components of this product have not been verified for inclusion on the Domestic Substance List (DSL).

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**15. REGULATORY INFORMATION**

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**WHMIS Classification**

D2B

This product was classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations and the MSDS contains all the information required by these regulations.

**SARA Title III Sect. 311/312 Categorization**

Immediate (Acute)

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**16. OTHER INFORMATION**

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**NFPA Ratings**

NFPA Code for Flammability - 1

NFPA Code for Health - 2

NFPA Code for Reactivity - 0

NFPA Code for Special Hazards – None

**HMIS Ratings**

HMIS Code for Flammability - 1

HMIS Code for Health - 2

HMIS Code for Physical Hazard - 0

HMIS Code for Personal Protection - See Section 8

\*Chronic

**Legend**

ACGIH: American Conference of Governmental Industrial Hygienists

CAS: Chemical Abstracts Service

ECHA: European Chemicals Agency

IARC: International Agency for Research on Cancer

N/A: Denotes no applicable information found or available

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PEL: Permissible Exposure Limit

SDS: Safety Data Sheet

STEL: Short Term Exposure Limit

TLV: Threshold Limit Value

**Information Source and References**

This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

**Prepared By:** EnviroNet LLC.

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