Safety Data Sheet
Fluorogenic Substrates

SECTION 1: Identification

1.1 Product identifier

Product name: Fluorogenic Substrates
Product number: Various part numbers (see below)

1.2 Other means of identification

HTI part numbers: SN-5, SN-7, SN-13a, SN-17a, SN-17c, SN-18, SN-20, SN-45, SN-54, SN-59

1.3 Recommended use of the chemical and restrictions on use

Substrates containing the fluorescent reporter group 6-amino-1-naphthalene-sulfonamide (ANSN) are useful compounds for monitoring the enzyme activity of various serine proteases.

1.4 Supplier's details

Name: Haematologic Technologies, Inc.
Address: 57 River Road
Essex Junction, VT 05452
USA
Telephone: +1 (802) 878-1777
Fax: +1 (802) 878-1776
Email: hti@haemtech.com

1.5 Emergency phone number(s)

+1 (802) 878-1777 Hours of operation: M-F 08:00-16:30 EST
+1 (800) 424-9300 (CHEMTREC®) during non-company hours

SECTION 2: Hazard identification

General hazard statement
This product is formulated in Dimethyl Sulfoxide (DMSO). Review the SDS for DMSO (CAS 67-68-5)

2.1 Classification of the substance or mixture

GHS classification in accordance with OSHA (29 CFR 1910.1200)
- Flammable liquids (chapter 2.6), Cat. 4
- Hazardous to the aquatic environment - acute hazard (chapter 4.1), Cat. 1

2.2 GHS label elements, including precautionary statements

Pictogram
Signal word  Warning

Hazard statement(s)
H227  Combustible liquid
H400  Very toxic to aquatic life

Precautionary statement(s)
P210  Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P273  Avoid release to the environment.
P280  Wear protective gloves/protective clothing/eye protection/face protection.
P370+P378  In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391  Collect spillage.
P403+P235  Store in a well ventilated place. Keep cool.
P501  Dispose of contents/container to an approved waste disposal plant.

2.3 Other hazards which do not result in classification
Rapidly absorbed through the skin.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-amino-1-naphthalenesulfonamide (CAS no.: 1206-43-5)</td>
<td>&gt; 0.6 - &lt; 0.8 % (Weight)</td>
</tr>
<tr>
<td>DIMETHYL SULFOXIDE (CAS no.: 67-68-5; EC no.: 200-664-3)</td>
<td>&gt; 99.2 - &lt; 99.4 % (Volume)</td>
</tr>
</tbody>
</table>

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice  Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled  If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact  Wash off with soap and plenty of water. Consult a physician.
In case of eye contact  Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed  Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms/effects, acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of immediate medical attention and special treatment needed, if necessary
No data available.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical
Carbon oxides, Sulphur oxides

5.3 Special protective actions for fire-fighters
Wear self-contained breathing apparatus for firefighting if necessary.

Further information
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Recommended storage at -20°C. Hygroscopic.

Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
CAS: 67-68-5 (EC: 200-664-3)

Version: Flurogenic Substrates - SDS, Revision: 1, Date of issue: 2016-03-23, p. 3 of 8
DIMETHYL SULFOXIDE
250.00 ppm TWA

8.2 Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Pictograms

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Thermal hazards
No data available.

Environmental exposure controls
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

- Appearance/form: Frozen liquid, tinted yellow.
- Odor: No data available.
- Odor threshold: No data available.
- pH: No data available.
- Melting point/freezing point: No data available.
- Initial boiling point and boiling range: No data available.
- Flash point: No data available.
- Evaporation rate: No data available.
- Flammability (solid, gas): No data available.
- Upper/lower flammability limits: No data available.
- Upper/lower explosive limits: No data available.
- Vapor pressure: No data available.
Vapor density: No data available.
Relative density: No data available.
Solubility(ies): No data available.
Partition coefficient: n-octanol/water: No data available.
Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.
Explosive properties: No data available.
Oxidizing properties: No data available.

Other safety information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
No data available.

10.2 Chemical stability
No data available. Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents

10.6 Hazardous decomposition products
No data available.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
DIMETHYL SULFOXIDE
LD50 Oral - Rat - 14,500 mg/kg

LC50 Inhalation - Rat - 40,250 ppm - 4 hours
LD50 Skin - Rabbit - > 5,000 mg/kg

Skin corrosion/irritation
Absorbs rapidly through skin! Mild skin irritation.

Serious eye damage/irritation
No data available.

Respiratory or skin sensitization
No data available.

Germ cell mutagenicity
DIMETHYL SULFOXIDE:

Mouse
lymphocyte
Cytogenetic analysis

Mouse
lymphocyte
Mutation in mammalian somatic cells.

Rat
Cytogenetic analysis
Mouse
DNA damage

Carcinogenicity
DIMETHYL SULFOXIDE:

Carcinogenicity - Rat - Oral
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity - Mouse - Oral
Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin and Appendages: Other: Tumors.

Reproductive toxicity
DIMETHYL SULFOXIDE:

Reproductive toxicity - Rat - Intraperitoneal
Effects on Fertility: Abortion.

Reproductive toxicity - Rat - Intraperitoneal
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - Rat - Subcutaneous
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth).
Reproductive toxicity - Mouse - Oral

Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

STOT-single exposure
No data available.

STOT-repeated exposure
No data available.

Aspiration hazard
No data available.

Additional information
DIMETHYL SULFOXIDE:
Exposure to large amounts can cause: redness of skin, itching, burning, sedation, Headache, Nausea, Dizziness
Eyes - Eye disease - Based on Human Evidence
SECTION 12: Ecological information

Toxicity
DIMETHYL SULFOXIDE
LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 hours
LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 hours
EC50 - Daphnia magna (water flea) - 24,600 - 48 hours
Remarks: OECD Test Guideline 202
EC50 - Pseudokirchneriella subcapitata (green algae) - 17,000 mg/l - 72 hours
Remarks: OECD Test Guideline 201

Persistence and degradability
DIMETHYL SULFOXIDE:
Result: 31 % - According to the results of tests of biodegradability this product is not readily biodegradable.
(OECD Test Guideline 301D)

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Results of PBT and vPvB assessment
No data available.

Other adverse effects
No data available.

SECTION 13: Disposal considerations

Disposal of the product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Disposal of contaminated packaging
Dispose of as unused product.

Waste treatment
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Sewage disposal
No data available.

Other disposal recommendations
No data available.

SECTION 14: Transport information
DOT (US)  
Not dangerous goods

IMDG  
Not dangerous goods

IATA  
Not dangerous goods

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

SARA 302 Components  
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components  
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards  
Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components  
No components are subject to the Massachusetts Right to Know Act.

New Jersey Right To Know Components  
Common name: DIMETHYL SULFOXIDE  
CAS number: 67-68-5

Pennsylvania Right To Know Components  
Common name: DIMETHYL SULFOXIDE  
CAS number: 67-68-5

California Prop. 65 Components  
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

16.1 Further information/disclaimer  
DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. In no event shall Haematologic Technologies, Inc. be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if Haematologic Technologies, Inc. has been advised of the possibility of such damages.