1. PRODUCT AND COMPANY IDENTIFICATION

Product Name
Guanidine thiocyanate

Cat No.
AC411110000; AC411110010; AC411110050; AC411111000; AC411112500

Synonyms
Guanidinium isothiocyanate; Thiocyanic acid, compound with Guanidine (1:1)

Recommended Use
Laboratory chemicals

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information in the US, call: 001-800-ACROS-01
For information in Europe, call: +32 14 57 52 11
Emergency Number, Europe: +32 14 57 52 99
Emergency Number, US: 001-201-796-7100
CHEMTREC Phone Number, US: 001-800-424-9300
CHEMTREC Phone Number, Europe: 001-703-527-3887

2. HAZARDS IDENTIFICATION

DANGER!

Emergency Overview
Causes burns by all exposure routes. Harmful by inhalation, in contact with skin and if swallowed. Contact with acids liberates toxic gas. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance
Off-white

Physical State
Powder Solid

Odor
odorless

Target Organs
Skin, Respiratory system, Eyes, Gastrointestinal tract (GI), Liver, Kidney

Potential Health Effects

Acute Effects

Principle Routes of Exposure
Eyes: Causes burns. 
Skin: Causes burns. Harmful in contact with skin. 
Inhalation: Causes burns. Harmful by inhalation. 
Ingestion: Causes burns. Harmful if swallowed.

Chronic Effects: May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions: No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiocyanic acid, compound with guanidine (1:1)</td>
<td>593-84-0</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

Ingestion: Do not induce vomiting. Call a physician or Poison Control Center immediately.

Notes to Physician: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point: No information available.
Method: No information available.

Autoignition Temperature: No information available.

Explosion Limits:
Upper: No data available
Lower: No data available

Suitable Extinguishing Media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media: No information available.

Hazardous Combustion Products:
Sensitivity to mechanical impact: No information available.
Sensitivity to static discharge: No information available.

Specific Hazards Arising from the Chemical: Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Avoid dust formation.

Environmental Precautions
Should not be released into the environment.

Methods for Containment and Clean Up
Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. HANDLING AND STORAGE

Handling
Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Do not breathe vapors/dust. Do not ingest. Keep away from acids.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from light. Corrosives area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures
Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines
This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

<table>
<thead>
<tr>
<th>Eye/face Protection</th>
<th>Skin and body protection</th>
<th>Respiratory Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.</td>
<td>Wear appropriate protective gloves and clothing to prevent skin exposure.</td>
<td>Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.</td>
</tr>
</tbody>
</table>

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Powder Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>Off-white</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available.</td>
</tr>
<tr>
<td>pH</td>
<td>approx.5 20% aq. solution</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>negligible</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No information available.</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available.</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>118 - 122°C / 244.4 - 251.6°F</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available.</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available.</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No information available.</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
</tbody>
</table>
9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>log Pow</td>
<td>No data available</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>118.16</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C2H6N4S</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

- **Stability**: Stable under normal conditions. Light sensitive.
- **Conditions to Avoid**: Avoid dust formation. Incompatible products. Exposure to light. Excess heat.
- **Incompatible Materials**: Acids, Strong oxidizing agents
- **Hazardous Decomposition Products**: Hydrogen cyanide (hydrocyanic acid), Carbon monoxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx), Sulfur oxides
- **Hazardous Polymerization**: Hazardous polymerization does not occur
- **Hazardous Reactions**: Contact with acids liberates toxic gas.

11. TOXICOLOGICAL INFORMATION

**Acute Toxicity**

- **Product Information**: See actual entry in RTECS for complete information.

**Component Information**

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (mg/kg) (rat)</th>
<th>LD50 Dermal (Not listed)</th>
<th>LC50 Inhalation (Not listed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiocyanic acid, compound with guanidine (1:1)</td>
<td>282</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

- **Irritation**: Causes burns by all exposure routes
- **Toxicologically Synergistic Products**: No information available.

**Chronic Toxicity**

- **Carcinogenicity**: There are no known carcinogenic chemicals in this product
- **Sensitization**: No information available.
- **Mutagenic Effects**: No information available.
- **Reproductive Effects**: No information available.
- **Developmental Effects**: No information available.
- **Teratogenicity**: No information available.
- **Other Adverse Effects**: The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.
- **Endocrine Disruptor Information**: No information available.
12. ECOLOGICAL INFORMATION

Ecotoxicity
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiocyanic acid, compound with guanidine (1:1)</td>
<td>Not listed</td>
<td>Poecilia reticulata: LC50=89.1 mg/L 96h</td>
<td>Not listed</td>
<td>EC50=42.4 mg/L 48h</td>
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</table>

Persistence and Degradability  
No information available

Bioaccumulation/ Accumulation  
No information available

Mobility  
No information available

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiocyanic acid, compound with guanidine (1:1)</td>
<td>-1.38</td>
</tr>
</tbody>
</table>

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. TRANSPORT INFORMATION

**DOT**

<table>
<thead>
<tr>
<th>UN-No</th>
<th>UN3261</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name</td>
<td>CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.</td>
</tr>
<tr>
<td>Proper technical name</td>
<td>(GUANIDINE THIOCYANATE)</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>8</td>
</tr>
<tr>
<td>Packing Group</td>
<td>III</td>
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**TDG**

<table>
<thead>
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<tr>
<td>Hazard Class</td>
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<tr>
<td>Packing Group</td>
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**IATA**

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</tr>
<tr>
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**IMDG/IMO**

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<td>Packing Group</td>
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</tr>
</tbody>
</table>
14. TRANSPORT INFORMATION

15. REGULATORY INFORMATION

International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thiocyanic acid, compound with guanidine (1:1)</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>209-812-1</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

Legend:

X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313
Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard
Yes
Chronic Health Hazard
No
Fire Hazard
No
Sudden Release of Pressure Hazard
No
Reactive Hazard
No

Clean Water Act
Not applicable

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA
Not Applicable

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know
Not applicable
U.S. Department of Transportation
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations
Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class
D1B  Toxic materials
E  Corrosive material

16. OTHER INFORMATION

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 26-Oct-2009
Print Date 04-Apr-2013
Revision Summary (M)SDS sections updated 2 3

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.