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# MATERIAL SAFETY DATA SHEET

EMERGENCY # FOR NATIONAL RESPONSE CENTER (800) 424-8802

Prepared 3/21/05

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## 1. CHEMICAL IDENTIFICATION Product Name

PRODUCT NAME : Fluoro Thiol: Fluorescent Thiol Detection Kit. Part# 5057

Part# 4021: BES Thiol

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## 2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAME : 2,4-Dinitrobenzenesulfonyl 2',7'-Dimethylfluorescein  
FORMULA : C<sub>28</sub>H<sub>18</sub>O<sub>11</sub>N<sub>2</sub>S  
MOLECULAR WEIGHT : 590.51  
CAS NUMBER : Not listed  
TSCA INVENTORY : Not listed (See Section 15)  
EINECS No. : Not listed

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## 3. HAZARDS IDENTIFICATION

May be harmful if inhaled and ingested.  
May cause eye and skin irritation.

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## 4. FIRST AID MEASURES

GENERAL ADVICE : Wash off immediately with soap and plenty of water. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit. Use personal protective equipment.

INHALATION : Move victim to fresh air. If breathing is difficult, give oxygen. If irritation persists, consult a physician.

SKIN CONTACT : Remove contaminated clothes and shoes, rinse skin with plenty of water or shower. Use soap to help assure removal. If irritation persists, consult a physician.

EYE CONTACT : Remove any contact lenses at once. Flush eyes well with a large amount of running water for at least 15 minutes. Assure adequate flushing by separating the eyelids with sterile fingers. If irritation persists, consult a physician.

INGESTION : Rinse mouth, give plenty of water to dilute the substance. Never give anything by mouth to an unconscious person. Consult a physician.

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## 5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA : Carbon dioxide, dry chemical powder, foam, water

FIRE & EXPLOSION HAZARDS : Toxic, irritating dust or smoke may be emitted.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS : Firemen should wear normal protective equipment(full bunker gear)and positive-

pressure self-contained breathing apparatus.

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## 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS : Remove ignition sources and ventilate the area. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid raising dust and avoid contact with skin and eyes.

ENVIRONMENTAL PRECAUTIONS : Prevent spills from entering sewers, watercourses or low areas.

METHODS FOR CLEAN UP : Do not touch spilled material without suitable protection(See section 8). After material is completely picked up, wash the spill site with soap and water and ventilate the area. Put all wastes in a plastic bag for disposal and seal it tightly. Remove, clean, or dispose of contaminated clothing.

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## 7. HANDLING AND STORAGE

Research use only.

HANDLING : Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Handle material with suitable protection.

STORAGE : Store away from sunlight in well-ventilated dry place at room temperature. Keep container tightly closed.

INCOMPATIBLE PRODUCTS : Oxidizers

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES : Use exhaust ventilation to keep airborne concentrations below exposure limits. Use only with adequate ventilation.

VENTILATION : Local Exhaust ; Necessary, Mechanical(General) ; Recommended

PERSONAL PROTECTION ;

Respiratory protection : Use a NIOSH/MSHA or European Standard EN149 approved respirator if the vapor concentrations exceed regulatory guidelines.

Hand protection : Chemical resistant gloves

Eye protection : Safety glasses(goggles)

Skin protection : Protective clothing

CONTROL PARAMETER :

OSHA Final Limits : None established

ACGIH TLV(s) : None established

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : Yellow - yellowish brown, crystalline powder - powder

ODOR : Not available

pH : Not available

BOILING POINT : Not available

MELTING POINT : Not available

FLASH POINT : Not available

FLAMMABILITY (solid, gas) : Not available

DECOMPOSITION TEMPERATURE : Not available

EXPLOSIVE LIMITS : Not available

VAPOR PRESSURE : Not available

SPECIFIC GRAVITY : Not available

SOLUBILITY IN ;

WATER : Slightly soluble

ACETONITRILE : Soluble

log Po/w : Not available

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## 10. STABILITY AND REACTIVITY

CONDITION TO AVOID : Sunlight, heat

INCOMPATIBILITY(MATERIAL TO AVOID) : Oxidizers  
HAZARDOUS DECOMPOSITION PRODUCTS : Carbon monoxide, nitrogen oxides, sulfur oxides, may be formed.  
HAZARDOUS POLYMERIZATION : Will not occur.

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#### 11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY DATA : Not available  
IRRITATION DATA : Not available  
MUTATION DATA : Not available  
REPRODUCTIVE EFFECTS DATA : Not available  
TUMORIGENIC DATA : Not available  
ADDITIONAL INFORMATION ;  
NTP : Not listed  
IARC : Not listed  
OSHA : Not listed  
ACGIH : Not listed

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#### 12. ECOLOGICAL INFORMATION

BIODEGRADABILITY : Not available  
BIOACCUMULATION POTENTIAL : Not available  
AQUATIC TOXICITY : Not available  
OTHER INFORMATION : Not available

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#### 13. DISPOSAL CONSIDERATION

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber in accordance with all applicable regulations. Any disposal practice must be in compliance with country, local, state, and federal laws and regulations ( contact country, local or state environmental agency for specific rules ).

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#### 14. TRANSPORT INFORMATION

IATA : Not Restricted.  
DOT(Department of Transportation) : Not a Hazardous Material for DOT shipping.

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#### 15. REGULATORY INFORMATION

US REGULATIONS ;  
EPA : CERCLA RQ= Not listed  
EPCRA TPQ= Not listed  
OSHA : TQ= Not listed  
TSCA : Use of this product must be restricted to research or analysis for the development of a product in accordance with the Act.

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#### 1. Chemical Identification:

Part# 7015 GSH Standard.  
Product Name :GLUTATHIONE, REDUCED  
Formula C10H17N3O6S  
Molecular Weight 307.33 AMU  
Synonyms Copren \* Deltathione \* Glutathion \* Glutathione  
Glutathione (reduced) \* Glutathione SH \*\* Reduced glutathione  
CAS# 70-18-8, EC no 200-725-4

Part# 3053: 1X Lysis Buffer

Product Name: 1X Lysis Buffer

Formula: Propriety. Contains: Octylphenoxy polyoxyethanol nonionic surfactant; An alkylphenol-hydroxypolyoxyethylene; Alkylaryl polyether alcohol; TRITON® X-100

Molecular Weight: NA

Synonyms: None

CAS# None, EC no None

## 2 - Hazards Identification

### SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

Not hazardous according to Directive 67/548/EEC.

## 3 - First Aid Measures

### AFTER INHALATION

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician. Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

### AFTER SKIN CONTACT

In case of contact, immediately wash skin with soap and copious amounts of water.

### AFTER EYE CONTACT

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Can cause severe eye irritation with symptoms of inflammation, tearing, blinking, redness, swelling of the conjunctiva, and chemical burns of the cornea. Call a physician.

### AFTER INGESTION

If swallowed, wash out mouth with water provided person is conscious. Call a physician. Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Aspiration into the lungs may occur during swallowing or vomiting, resulting in lung damage.

## 4 - Fire Fighting Measures

### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

### SPECIAL RISKS

Specific Hazard(s): Emits toxic fumes under fire conditions.

### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

## 5- Accidental Release Measures

### PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Exercise appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

### METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

For 1X Lysis Buffer: Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! Guard against falls as

material is slippery. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities.

#### 6 - Handling and Storage

##### HANDLING

Directions for Safe Handling: Avoid inhalation. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

##### STORAGE

Conditions of Storage: Keep tightly closed.

Store at 2-8°C

#### 7 - Exposure Controls / Personal Protection

##### ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

##### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

##### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Wear dust mask.

Hand Protection: Protective gloves.

Eye Protection: Chemical safety goggles.

#### 8 - Physical and Chemical Properties

##### **For: GSH Standard**

Appearance Color: White

Form: Powder

Property Value At Temperature or Pressure

pH N/A

BP/BP Range N/A

MP/MP Range 192 - 195 °C

Flash Point N/A

Flammability N/A

Autoignition Temp N/A

Oxidizing Properties N/A

Explosive Properties N/A

Explosion Limits N/A

Vapor Pressure N/A

SG/Density N/A

Partition Coefficient N/A

Viscosity N/A

Vapor Density N/A

Saturated Vapor Conc. N/A

Evaporation Rate N/A

Bulk Density N/A

Decomposition Temp. N/A

Solvent Content N/A

Water Content N/A

Surface Tension N/A

Conductivity N/A

Miscellaneous Data N/A

Solubility N/A

##### **For: 1X Lysis Buffer**

Appearance:

Transparent liquid.

Odor: Mild odor.

Solubility:  
Miscible in water.

#### 9 - Stability and Reactivity

##### STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

##### HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides.

##### HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur.

#### 10 - Toxicological Information

##### **For GSH Standard**

RTECS NUMBER: MC0556000

##### ACUTE TOXICITY

##### LD50

Oral Mouse 5000 mg/kg

LD50 Intraperitoneal Mouse

4020 MG/KG

LD50Subcutaneous Mouse

5 GM/KG

LD50 Intravenous Mouse

2238 MG/KG

##### LD50

Intramuscular Mouse

4 GM/KG

LD50 Intravenous Rabbit

>2 GM/KG

##### **For 1X Lysis Buffer**

##### Toxicological Data:

For Triton X-100: LD50 oral rat 1800 mg/kg. For Polyethylene glycol octylphenyl ether: LD50 oral rat 4190 mg/kg; Irritation (Std Draize, eye, rabbit) 1% severe. Investigated as a mutagen.

Polyethylene glycol has been investigated as a mutagen.

##### Carcinogenicity:

This product may contain trace amounts of ethylene oxide and dioxane.

Ethylene Oxide: NIOSH considers this substance to be a potential occupational carcinogen.

Regulated by OSHA as a carcinogen.

Dioxane: NIOSH considers this substance to be a potential occupational carcinogen. EPA / IRIS classification: Group B2 - Probable human carcinogen, sufficient animal evidence.

#### 11 - Ecological Information

No data available.

#### 13 - Disposal Considerations

##### SUBSTANCE DISPOSAL

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an

afterburner and scrubber. Observe all federal, state, and local environmental regulations.

##### **For 1X Lysis Buffer**

##### Environmental Toxicity:

For Triton X-100: The LC50/96-hour values for fish are between 1 and 10 mg/l. This material is expected to be toxic to aquatic life.

12 - Transport Information

RID/ADR

Non-hazardous for road transport.

IMDG

Non-hazardous for sea transport.

IATA

Non-hazardous for air transport.

13 - Other Information

For R&D use only. Not for drug, household or other uses.