# SAFETY DATA SHEET

## 1. Identification

| | |
|---|---|
| **Product identifier** | **GRD Pathogen Lysis Buffer** |
| **Other means of identification** | |
| **Product code** | G210223 |
| **Recommended use** | Research use only (RUO) for nucleic acid extraction process. |
| **Recommended restrictions** | Not for use in clinical or in vitro diagnostics. |
| **Manufacturer/Importer/Supplier/Distributor information** | |
| **Company name** | GRD Diagnostics |
| **Address** | 200 Enterprise Drive<br>Pekin, IL 61554<br>USA |
| **Website** | www.redituslabs.com |
| **Fax** | (469) 498-0223 |
| **Telephone** | (866) 736-0002 |
| **Emergency telephone** | 800-451-8346 (24 hours)<br>Account number: 17687 |

## 2. Hazard(s) identification

| | | |
|---|---|---|
| **Physical hazards** | Not classified. | |
| **Health hazards** | Acute toxicity, oral | Category 4 |
| | Skin corrosion/irritation | Category 1C |
| | Serious eye damage/eye irritation | Category 1 |
| **Environmental hazards** | Hazardous to the aquatic environment, acute hazard | Category 3 |
| | Hazardous to the aquatic environment, long-term hazard | Category 3 |
| **OSHA defined hazards** | Not classified. | |

**Label elements**

| | |
|---|---|
| **Signal word** | Danger |
| **Hazard statement** | Harmful if swallowed. Causes severe skin burns and eye damage. Harmful to aquatic life with long lasting effects. |
| **Precautionary statement** | |
| **Prevention** | Do not breathe mist/vapors. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. |
| **Response** | If swallowed: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center/doctor. |
| **Storage** | Store locked up. |
| **Disposal** | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| **Hazard(s) not otherwise classified (HNOC)** | Contact with acids liberates very toxic gas. Corrosive to the respiratory tract. |
| **Supplemental information** | None. |

## 3. Composition/information on ingredients

**Mixtures**

| Chemical name | CAS number | % |
|---|---|---|
| Guanidinium thiocyanate | 593-84-0 | 47 - 51 |
| EDTA | 60-00-4 | 9 - 11 |
| Triton X-100 | 9002-93-1 | 3 - 5 |

**Composition comments**

The exact percentage (concentration) of composition has been withheld as a trade secret.

All concentrations are in percent by weight. Components not listed are either non-hazardous or are below reportable limits.

## 4. First-aid measures

**Inhalation**

Remove person to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.

**Skin contact**

Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician or poison control center immediately. Chemical burns must be treated by a physician.

**Eye contact**

Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately.

**Ingestion**

Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

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

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Causes respiratory tract burns. Causes digestive tract burns.

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

Provide general supportive measures and treat symptomatically. Chemical burns: Flush with water immediately. While flushing, remove clothes which do not adhere to affected area. Call an ambulance. Continue flushing during transport to hospital. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

**General information**

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before reuse.

## 5. Fire-fighting measures

**Suitable extinguishing media**

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).

**Unsuitable extinguishing media**

Do not use water jet as an extinguisher, as this will spread the fire.

**Specific hazards arising from the chemical**

During fire, gases hazardous to health may be formed.

**Special protective equipment and precautions for firefighters**

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Fire fighting equipment/instructions**

In case of fire and/or explosion do not breathe fumes. Move material from fire area if you can do so without risk. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

**Specific methods**

Use standard firefighting procedures and consider the hazards of other involved materials.

**General fire hazards**

Contains one or more components that will burn if involved in a fire.

## 6. Accidental release measures

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

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist/vapors. Do not get in eyes, on skin, on clothing. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

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

Prevent product from entering drains. Prevent contact with bleach and acids.

Stop the flow of material, if this is without risk. Absorb in vermiculite, dry sand or earth and place into containers. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Following product recovery, flush area with water. Retain and dispose of contaminated wash water. Never divert spill to acid-containing sewer.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

| | |
|---|---|
| **Environmental precautions** | Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground. |

## 7. Handling and storage

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|---|---|
| **Precautions for safe handling** | Do not breathe mist/vapors. Do not get in eyes, on skin, or on clothing. Do not taste or swallow. When using, do not eat, drink or smoke. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment (See Section 8). Wash hands thoroughly after handling. Prevent contact with bleach and acids. Avoid release to the environment. Observe good industrial hygiene practices. |
| **Conditions for safe storage, including any incompatibilities** | Store locked up. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Do not store in unlabelled containers. Recommended storage temperature: (59 – 77°F) / (15 – 25°C). Store away from incompatible materials (see Section 10 of the SDS). |

## 8. Exposure controls/personal protection

| | |
|---|---|
| **Occupational exposure limits** | No exposure limits noted for ingredient(s). |
| **Biological limit values** | No biological exposure limits noted for the ingredient(s). |
| **Appropriate engineering controls** | Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product. |

**Individual protection measures, such as personal protective equipment**

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|---|---|
| **Eye/face protection** | Wear tight fitting goggles and face shield. |
| **Skin protection** | |
| **Hand protection** | Wear appropriate chemical resistant gloves. Disposable vinyl gloves are recommended. Other suitable gloves can be recommended by the glove supplier. |
| **Skin protection** | |
| **Other** | Wear lab coat or other protective garments. |
| **Respiratory protection** | If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. If respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134. Appropriate respirator selection should be made by a qualified professional. |
| **Thermal hazards** | No protection is ordinarily required under normal conditions of use. |
| **General hygiene considerations** | Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. |

## 9. Physical and chemical properties

**Appearance**

| | |
|---|---|
| **Physical state** | Liquid. |
| **Form** | Liquid. |
| **Color** | Not available. |
| **Odor** | Not available. |
| **Odor threshold** | Not available. |
| **pH** | Not available. |
| **Melting point/freezing point** | Not available. |
| **Initial boiling point and boiling range** | Not available. |
| **Flash point** | Not available. |
| **Evaporation rate** | Not available. |
| **Flammability (solid, gas)** | Not applicable. |

**Upper/lower flammability or explosive limits**

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|---|---|
| **Flammability limit - lower (%)** | Not available. |

| | |
|---|---|
| **Flammability limit - upper (%)** | Not available. |
| **Vapor pressure** | Not available. |
| **Vapor density** | Not available. |
| **Relative density** | Not available. |
| **Solubility(ies)** | |
| **Solubility (water)** | Not available. |
| **Partition coefficient (n-octanol/water)** | Not applicable. |
| **Auto-ignition temperature** | Not available. |
| **Decomposition temperature** | Not available. |
| **Viscosity** | Not available. |
| **Other information** | |
| **Explosive properties** | Not explosive. |
| **Oxidizing properties** | Not oxidizing. |

## 10. Stability and reactivity

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|---|---|
| **Reactivity** | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| **Chemical stability** | Material is stable under normal conditions. |
| **Possibility of hazardous reactions** | Contact with acids or bleach liberates toxic gases. |
| **Conditions to avoid** | Protect against direct sunlight. Extreme temperatures. Contact with incompatible materials. |
| **Incompatible materials** | Acids. Bleach. Strong oxidizing agents. |
| **Hazardous decomposition products** | Thermal decomposition or combustion may liberate toxic and/or corrosive gases or fumes. Carbon oxides. Nitrogen oxides. Sulfur oxides. Hydrogen cyanide. |

## 11. Toxicological information

**Information on likely routes of exposure**

| | |
|---|---|
| **Inhalation** | Causes respiratory tract burns. |
| **Skin contact** | Causes severe skin burns. |
| **Eye contact** | Causes serious eye damage. |
| **Ingestion** | Causes digestive tract burns. Harmful if swallowed. |
| **Symptoms related to the physical, chemical and toxicological characteristics** | Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Causes respiratory tract burns. Causes digestive tract burns. |

**Information on toxicological effects**

**Acute toxicity** Harmful if swallowed.

| Components | Species | Test Results |
|---|---|---|
| EDTA (CAS 60-00-4) | | |
| **Acute** | | |
| **Oral** | | |
| LD50 | Rat | > 2000 mg/kg |
| Guanidinium thiocyanate (CAS 593-84-0) | | |
| **Acute** | | |
| **Oral** | | |
| LD50 | Rat | 593 mg/kg |

| | |
|---|---|
| **Skin corrosion/irritation** | Causes severe skin burns. |
| **Serious eye damage/eye irritation** | Causes serious eye damage. |
| **Respiratory or skin sensitization** | |
| **Respiratory sensitization** | Not a respiratory sensitizer. |
| **Skin sensitization** | This product is not expected to cause skin sensitization. |

**Germ cell mutagenicity** No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity** Not classifiable as to carcinogenicity to humans.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Not listed.

**NTP Report on Carcinogens**

Not listed.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Reproductive toxicity** This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure** Not classified.

**Specific target organ toxicity - repeated exposure** Not classified.

**Aspiration hazard** Not an aspiration hazard.

**Chronic effects** Prolonged inhalation may be harmful.

## 12. Ecological information

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

| Components | | Species | Test Results |
|---|---|---|---|
| EDTA (CAS 60-00-4) | | | |
| **Aquatic** | | | |
| Crustacea | EC50 | Daphnia magna | 480 mg/l, 24 hours |
| Fish | LC50 | Fathead minnow (Pimephales promelas) | 59.8 mg/l, 96 hours |
| Guanidinium thiocyanate (CAS 593-84-0) | | | |
| **Aquatic** | | | |
| *Acute* | | | |
| Crustacea | EC50 | Daphnia magna | 42.4 mg/l, 48 hours |
| Triton X-100 (CAS 9002-93-1) | | | |
| **Aquatic** | | | |
| *Acute* | | | |
| Crustacea | LC50 | Daphnia magna | > 44 mg/l, 48 hours |
| Fish | LC50 | Fish | 16 mg/kg |

**Persistence and degradability** No data is available on the degradability of this product.

**Bioaccumulative potential** No data available on bioaccumulation.

**Mobility in soil** No data available for this product.

**Other adverse effects** The product may affect the acidity (pH-factor) in water with risk of harmful effects to aquatic organisms.

## 13. Disposal considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

**Local disposal regulations** Dispose in accordance with all applicable regulations.

**Hazardous waste code** D002: Corrosive waste
The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Waste from residues / unused products** Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging** Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport information

**DOT**

| | |
|---|---|
| **UN number** | UN1760 |
| **UN proper shipping name** | Corrosive liquids, n.o.s. (Guanidinium thiocyanate) |
| **Transport hazard class(es)** | |
| **Class** | 8 |
| **Subsidiary risk** | - |
| **Label(s)** | 8 |
| **Packing group** | III |
| **Environmental hazards** | |
| **Marine pollutant** | No |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |
| **Special provisions** | IB3, T7, TP1, TP28 |
| **Packaging exceptions** | 154 |
| **Packaging non bulk** | 203 |
| **Packaging bulk** | 241 |

**IATA**

| | |
|---|---|
| **UN number** | UN1760 |
| **UN proper shipping name** | Corrosive liquid, n.o.s. (Guanidinium thiocyanate) |
| **Transport hazard class(es)** | |
| **Class** | 8 |
| **Subsidiary risk** | - |
| **Label(s)** | 8 |
| **Packing group** | III |
| **Environmental hazards** | No |
| **ERG Code** | 8L |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

**IMDG**

| | |
|---|---|
| **UN number** | UN1760 |
| **UN proper shipping name** | CORROSIVE LIQUID, N.O.S. (Guanidinium thiocyanate) |
| **Transport hazard class(es)** | |
| **Class** | 8 |
| **Subsidiary risk** | - |
| **Packing group** | III |
| **Environmental hazards** | |
| **Marine pollutant** | No |
| **EmS** | F-A, S-B |
| **Special precautions for user** | Read safety instructions, SDS and emergency procedures before handling. |

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not established.

## 15. Regulatory information

**US federal regulations** This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**

Not regulated.

**CERCLA Hazardous Substance List (40 CFR 302.4)**

EDTA (CAS 60-00-4) Listed.

**SARA 304 Emergency release notification**

Not regulated.

**OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)**

Not listed.

**Toxic Substances Control Act (TSCA)** All components of the mixture on the TSCA 8(b) inventory are designated “active”.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**SARA 302 Extremely hazardous substance**

Not listed.

**SARA 311/312 Hazardous chemical** Yes

**Classified hazard categories**
Acute toxicity (any route of exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation
Hazard not otherwise classified (HNOC)

**SARA 313 (TRI reporting)**
Not regulated.

**Other federal regulations**

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**
Not regulated.

**Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)**
Not regulated.

**Safe Drinking Water Act (SDWA)** Not regulated.

**US state regulations**

**US. Massachusetts RTK - Substance List**
EDTA (CAS 60-00-4)

**US. New Jersey Worker and Community Right-to-Know Act**
EDTA (CAS 60-00-4)

**US. Pennsylvania Worker and Community Right-to-Know Law**
EDTA (CAS 60-00-4)

**US. Rhode Island RTK**
Not regulated.

**California Proposition 65**
California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins. For more information go to www.P65Warnings.ca.gov.

**International Inventories**

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|---|---|---|
| Australia | Australian Inventory of Industrial Chemicals (AICIS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | No |
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | No |
| Korea | Existing Chemicals List (ECL) | No |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| Taiwan | Taiwan Chemical Substance Inventory (TCSI) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information, including date of preparation or last revision

**Issue date** 04-May-2021
**Revision date** -
**Version #** 01

**NFPA ratings**


**Disclaimer**

GRD Diagnostics cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.