

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: DNA Extraction Solution
Cat. No. GT 192

Molecular Research Center, Inc.
5645 Montgomery Rd.
Cincinnati, Ohio 45212
USA 1-888-841-0900
Fax: 513-841-0080

Product Name: DNA Extraction Solution

Application: DNA extraction solution for animal and plant tissues, cells and whole blood

Synonym: Guanidine thiocyanate or isothiocyanate and guanidinium thiocyanate or isothiocyanate solution.

Chemical Formula: A solution

CHEMTREC EMERGENCY NUMBER: Only in the event of an emergency involving a spill, leak, fire exposure or accident. USA: 1-800-424-9300; International: +1-703-527-3887.

2. HAZARD IDENTIFICATION

OSHA HAZARDS:

Toxic by inhalation. Harmful by ingestion.

GHS - Classification

Acute toxicity, Dermal (category 4)

Acute toxicity, Oral (Category 4)

Acute toxicity, Inhalation (Category 4)

Pictogram:



Signal Word: Warning

Health Hazard

Hazard Class	Hazard category	Code	Health Hazard Statements
Acute toxicity, oral	Category 4	H302	Harmful if swallowed
Acute toxicity, dermal	Category 4	H312	Harmful if contact with skin
Acute toxicity, Inhalation	Category 4	H332	Harmful if inhale
Hazardous to the aquatic environment chronic toxicity	Category 3	H412	Harmful to aquatic life with long lasting effects

Precautionary statements

Code	Prevention precautionary statements
P233	Keep container tightly closed.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P264	Wash...thoroughly after handling
P270	Do not eat, drink or smoke when using this product
P271	Use in a well-ventilated area
P273	Avoid release to the environment
P281	Use personal protective equipment as required.
P301+P312	If Swallowed: Call a POISON CENTER or doctor/physician if you feel unwell
P301+P330+P331	If Swallowed: Rinse mouth. Do not induce vomiting
P302+P361+P352	If on skin: Remove/take off all contaminated clothing. Wash with plenty of soap and water.
P306+P363	If on clothing: Wash contaminated clothing before reuse.
P304+P340	If Inhaled: Remove victim to fresh air and keep at rest in a comfortable position for breathing
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P303+P361+P353	If on skin or hair: Immediately take off all contaminated clothing. Rinse skin with water/shower.
P309+P311	If exposed or you feel unwell: Call a POISON CENTER or doctor/physician.
P370+P378	In case of fire: Use standard fire extinguisher for extinction.
P403+P233	Store in well-ventilated location. Keep container tightly closed.

EFFECTS OF OVEREXPOSURE: A mildly hazardous product, which may irritate skin and eyes and may have moderate inhalation or ingestion toxicity. It may produce hazardous vapors, including nitrous oxide and cyanide, if heated to decomposition. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Potential Routes of Exposure and Resulting Health Effects

Eyes: May cause reddening and irritation of the eye.

Skin: May cause irritation to skin consisting of reddening, itching, and pain.

Inhalation: May cause irritation of the throat, coughing, shortness of breath and respiratory tract irritation.

Ingestion: May be harmful if swallowed causing psychosis, vomiting, disorientation, weakness, low blood pressure, and convulsions.

HMIS Classification

Health Hazard 2
Flammability 0
Physical hazards 0
PPE = D

NFPA Rating

Health Hazard 2
Fire 0
Reactivity 0

3. COMPOSITION/Information on Ingredients

Component	Classification	Concentration
Guanidine Thiocyanate	CAS-No. 593-84-0 EC-No. 209-812-1 Index-No. 615-030-00-5 RTECS # SJ3325000 DOT UN: 282155	< 50 %

4. FIRST AID

CHEMICAL EXPOSURE

EYES: Check for and remove contact lenses. Flush with water in an eyewash station for at least 15 minutes, holding eyelids open. Obtain medical attention if discomfort or medical symptoms persist.

SKIN: Remove contaminated clothing. Wash affected area with soap or mild detergent and large amounts of water. Use deluge safety shower to decontaminate large areas of body surface with running water and nonabrasive soap. Obtain medical attention if discomfort or symptoms persist.

INHALATION: Remove person to fresh air. Monitor for respiratory distress and start artificial respiration, if needed. Obtain medical attention if discomfort or symptoms persist.

INGESTION: Remove dentures, if any. Have conscious person drink several glasses of water or milk. Do not induce vomiting unless directed to do so by medical personnel. Lower head so vomit will not reenter the mouth or throat. Never give an unconscious person anything to ingest. Obtain medical attention.

5. FIRE FIGHTING MEASURES

Not flammable or combustible.

EXTINGUISHING MEDIA: Dry chemical, powder.

FIREFIGHTING: Evacuate area. Wear positive pressure self-contained breathing apparatus. Extinguish fire using indicated agents.

HAZARDOUS COMBUSTION PRODUCTS: Hazardous decomposition products may form under fire conditions. Carbon oxides, nitrogen oxides, sulfur oxides, hydrogen cyanide, and ammonium.

6. ACCIDENTAL RELEASE MEASURES

Note that accidental releases may be subject to special reporting requirements and other regulatory mandates. Check and comply with applicable laws and regulations.

PERSONAL PROTECTIVE EQUIPMENT FOR SPILL CONDITIONS: Use gloves, boots, and impermeable clothing to avoid skin contact. Use chemical goggles, face shield, or other appropriate eye protection. Avoid breathing vapors and ensure adequate ventilation.

SPILL AND LEAK RESPONSE: Restrict persons not wearing protective equipment from area. Prevent further leakage or spill if safe to enter spill area. Do not allow chemical to enter drains and discharge into environment. Soak up liquid with inert absorbent material and dispose of as hazardous waste in suitable closed containers.

7. HANDLING AND STORAGE

IRRITANT: Keep container tightly closed in a cool, dry area. Avoid contact with acids. Avoid skin contact and inhalation. Wear eye protection and gloves when handling. Store the reagent at room temperature (15-30 C), under standard atmospheric conditions. Keep container tightly sealed to minimize evaporation. The solution is suitable for most laboratory storage areas. Avoid eating and smoking in work areas. Wash hands thoroughly after using this material.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Does not contain substances with occupational exposure limit values.

GENERAL PROTECTION AND PRECAUTIONS

PROTECTIVE MEASURES: Do not touch unprotected skin. Do not wear contact lenses while handling this product. Do not pipette by mouth. Area ventilation is generally adequate, but use fume hood if available.

GLOVES AND PROTECTIVE CLOTHING: Employee must wear appropriate (impervious) clothing and gloves (rubber or neoprene rubber) to prevent any possibility of skin contact with this substance. Protective clothing should be selected in accordance with the level of the hazard.

EYE PROTECTION: Safety glasses should be the minimum eye protection. Wear chemical goggles to reduce exposure to aerosols or mists.

EMERGENCY WASH FACILITIES: Where there is any possibility that an employee's eyes and /or skin may be exposed to this substance; the employer should provide an eye wash fountain and quick drench shower within the immediate work area for emergency use.

ROUTINE OPERATIONS: Lab coats, safety glasses with side shields and gloves should be considered minimum body protection. Wash hands thoroughly after using the reagent and never eat, drink, use tobacco products, apply cosmetics or take medications in areas where the solution is handled, processed or stored. Always wash hands after using the reagent.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Description:	Colorless
Solvent solubility:	Soluble in water and glycerol; relatively soluble in alcohol

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressures.

INCOMPATIBILITIES: Strong acids, oxidizing agents and cyanides.

DECOMPOSITION: Thermal decomposition products may include toxic oxides of carbon.

POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: No oral, inhalation or dermal LD50 or LC50 data are available.

CARCINOGENICITY: No component of this product present at levels greater than or equal to 0.1 % is identified as a probable, possible or confirmed human carcinogen by IARC, ACGIH, NTP or OSHA.

REPRODUCTIVE TOXICITY: No data available.

TERATOGENICITY: No data available.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Short-term toxic effects are expected to be limited to the immediate area of environmental release, but no detailed information is available. Environmental hazard cannot be excluded if the chemical is handled or disposed of in an unprofessional manner.

13. DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service to provide advice regarding the dispose of this material.

DISPOSAL BY INCINERATION: Keep in sealed containers between use and final disposal. Reagent may be incinerated in a hazardous waste incinerator equipped with appropriate controls for oxides of sulfur and nitrogen. All waste disposal activities are subject to federal, state and local laws and regulations.

14. TRANSPORTATION INFORMATION

This material is not a hazardous material as defined by 49 CFR 172.101 by the U.S. DOT, IMDG or IATA.
(Guanidine Isothiocyanate)

15. REGULATORY INFORMATION

OSHA: Toxic by inhalation, harmful by ingestion.

SARA SECTION 302: No chemicals in this solution are subject to the reporting requirements of SARA Title III, Sec 302.

SARA SECTION 313: This solution does not contain any components with known CAS numbers that exceed the threshold (DeMinimis) reporting levels for SARA Title III, Sec 313

Massachusetts Right to Know Components: No components subject to Right to Know Act.

Pennsylvania Right to Know Components: CAS # 593-84-0 Guanidinium thiocyanate.

New Jersey Right to Know Components: CAS # 593-84-0 Guanidinium thiocyanate.

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

WHMIS hazard class: Non-controlled.

Note that it is the responsibility of the purchaser and of those handling this material to comply with applicable laws and regulations that are site and activity specific.

16. OTHER INFORMATION

Reviewed by	BW, MJ
Creation date	04/01/13
Revision date	10/16/2023 SP

Reason for Revision: Update to Globally Harmonized System of Chemical Classification.

This information is believed to be accurate and represents the information currently available to us. However, we make no warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.