

SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: DNAzol, DNAzol-ES (Extra Strength); DNAzol-BD (Blood)
Cat. Nos. DN-127, DN-128, DN-129

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

Product Name: DNAzol Reagent (Genomic DNA Isolation Reagent)

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

Synonym: Guanidine extraction solution

Chemical Formula: A formulation

Molecular Weight: A formulation

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

GHS - Classification

Signal Word: Warning



Health Hazard

<u>Hazard Class</u>	<u>Hazard category</u>	<u>Code</u>	<u>Health Hazard Statements</u>
Flammable liquid	Category 4	H227	Combustible liquid
Acute toxicity, oral	Category 5	H303	May be harmful if swallowed
Acute toxicity, dermal skin	Category 5	H313	May be harmful in contact with skin
Skin Corrosion/irritation	Category 3	H316	Causes skin burns and eye damage
Causes serious eye irritation	Category 2a	H319	Serious eye damage/eye irritation

Code Precautionary statements

Prevention

P210	Keep away from heat/sparks/open flame/hot surfaces. No smoking.
P233	Keep container tightly closed.
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

P280	Wear protective gloves/protective clothing/eye protection/face protection
Response	
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.
P303+P361+P353	If on skin or hair: Immediately take off all contaminated clothing. Rinse skin with water/shower.
P304+P340 breathing	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.
P306+P363	If on clothing: Wash contaminated clothing before reuse.
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.
Storage	
P403+P233	Store in well-ventilated place. Keep container tightly closed.
Disposal	
P501	Dispose of contents/container to an approved waste disposal plant.

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

- EYE:** 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 1
 Flammability 2
 Physical hazards 0
 PPE = C

NFPA Rating

Health Hazard 1
 Fire 2
 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	Proprietary formulation
Nonhazardous ingredients	NA 0004	

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. Do not use eye ointment. Obtain medical attention if discomfort or medical symptoms persist.

SKIN: Remove contaminated clothing and wipe off excess solution from skin. Flush area with water for 10-15 min. 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

Combustible: Yes

Autoignition temperature: N/A

Flammable limits in air by volume, percent: lower: N/A; upper: N/A

Transportation of dangerous goods flammability class: Combustible

EXTINGUISHING MEDIA: Product may contribute to a fire at elevated temperatures or by contact with an ignition source. Use water spray, CO₂, dry chemical powder, alcohol or polymer foam.

FIREFIGHTING PROCEDURES: Wear positive pressure, self-contained breathing apparatus and protective clothing. Prevent contact with skin and eyes. Unusual fire and explosion hazards: emits toxic fumes under fire conditions, including carbon and nitrogen oxides, sulfur oxides, hydrogen cyanide and ammonia.

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.

SPILL AND LEAK RESPONSE: Evacuate area, allowing trained personnel to use pre-planned procedures to perform cleanup. Wear personal protective equipment as required. Remove all sources of ignition. Contain liquid with adsorbent material. Decontaminate and ventilate area. Place spill residue in sealed double bags. Dispose of contaminated material in accordance with federal, state and local hazardous waste disposal regulations.

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

GENERAL PROTECTION AND PRECAUTIONS

Laboratory exhaust hood or local exhaust should be used when working with large volumes of reagent. Ensure availability of safety shower and eyewash before using.

ROUTINE OPERATIONS: For routine use, latex gloves, chemical safety goggles, and lab coat are considered the minimum body protection. Avoid generation of aerosols. Wash hands thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and odor:	Either a green or amber liquid solution with a medicinal-like odor.
Vapor density:	N/A
Evaporation rate:	N.D.A.
Melting point:	N/A
Flash point:	67C
Specific gravity:	>1
pH	~ 8.5
Solubility	Soluble in water

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions of use, temperature and pressure.

INCOMPATIBILITIES: Strong oxidizing agents, iron, strong acids, and acid chlorides.

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, nitrogen oxides, sulfur oxides, and cyanide.

CONDITIONS TO AVOID: Heat, flames, ignition sources and incompatibilities.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: **Mouse** :(guanidine isothiocyanate) IP LD50=300 mg/kg, (Thiocyanate) oral LD50=362 mg/kg. **Rat:** (Thiocyanate) oral LD50=764 mg/kg. **Human:** No info found. Causes eye and skin irritation. Material is an irritant to mucous membranes and upper respiratory tract. Only selected data is presented here. To the best of our knowledge, all the properties of this compound have not been investigated thoroughly. See actual entry in Registry of Toxic Effects of Chemical Substances (RTECS# X11225000) for more complete information.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE: Structure suggests material is biodegradable in moist soil or water, expected to rapidly decompose in the environment.

Ecotoxicological information: Little or no toxic effects found.

13. DISPOSAL CONSIDERATIONS

EPA Waste Number (RCRA Hazard Class): Not specifically listed in the D, F, K, P, or U waste tables of the U.S. EPA Resource Conservation and Recovery Act, 40 CFR Part 261. Note that treatment and disposal activities may be subject to laws and regulations that may include before-the-fact permitting as well as reporting requirements. It is the purchaser's responsibility to comply. Contact a licensed professional waste disposal service to 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.

DISPOSAL IN WASTE WATER: Low concentrations are expected to degrade in biological wastewater treatment facilities.

14. TRANSPORTATION INFORMATION

This material is not a hazardous material as defined in 49 CFR 172 and 173 by the U.S. DOT. (Guanidine Isothiocyanate)

15. REGULATORY INFORMATION

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.

OSHA: CONSIDERED HAZARDOUS UNDER 29 CFR 1910.1200: NO PEL ESTABLISHED.

TSCA INVENTORY STATUS: INCLUDED IN THE US EPA TSCA: 40 CFR PART 710.

SARA: NO RQ LISTED.

CANADIAN REGULATIONS: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM: THIS PRODUCT HAS BEEN CLASSIFIED ACCORDING TO THE HAZARD CRITERIA OF THE CONTROLLED PRODUCTS REGULATIONS, AND THE MSDS CONTAINS ALL REQUIRED INFORMATION.

EUROPEAN UNION: NOT FOUND

RISK PHRASE: WARNING!

16. OTHER INFORMATION

Reviewed by	BW, MJ
Creation date	12/01/97
Revision date	01/01/18

Reason for Revision: Three-year update.

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.