

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: DNAzol®, DNAzol ES (Extra Strength), DNAzol® BD (Blood)
Cat No: DN-127, DN-128, DN-129

Molecular Research Center, Inc.
5645 Montgomery Rd.
Cincinnati, Ohio 45212
1-888-841-0900

Product Name: DNAzol Reagent (Genomic DNA Isolation Reagent)
Chemical Formula: A formulation
Molecular Weight: A formulation

NFPA RATINGS: (scale 0-4) Health=1 Fire=2 Reactivity=0
HMIS RATINGS: (scale 0-4) Health=1 Fire=2 Reactivity=0 PPE=C

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. COMPOSITIONS AND INFORMATION ON INGREDIENTS

Component	CAS No.	RTECS #	Percent
Guanidine Thiocyanate	593-84-0	XL 1225000	Proprietary Information
Nonhazardous Ingredients	N/A	N/A	Proprietary Information

3. HEALTH HAZARD IDENTIFICATION

ROUTES OF ENTRY:

Inhalation: Yes
Skin: Yes
Ingestion: Yes

EFFECTS OF OVEREXPOSURE: A mildly hazardous product, which can irritate skin and eyes and is expected to have moderate inhalation or ingestion toxicity. 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.

ACUTE EFFECTS

EYE EXPOSURE: May cause reddening and irritation of the eye.

SKIN OVEREXPOSURE: 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.

4. FIRST AID

FIRST AID FOR EYES: Check for and remove contact lenses. Flush with water in an eyewash for at least 15 minutes, holding eyelids open. Do not use eye ointment. Obtain medical attention if discomfort or medical symptoms persist.

FIRST AID FOR 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.

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

FIRST AID FOR INGESTION: Remove dentures, if any. Have conscious person drink several glasses of water or milk. Induce vomiting by sticking finger in throat. Lower head so vomit will not reenter the mouth or throat. Never give an unconscious person anything to ingest. Obtain medical attention.

5. FIRE AND EXPLOSION HAZARD DATA

Combustible: Yes

Flash point: 59 C (D93 Method A)

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 absorbant 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 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 / 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
Boiling point:	N.D.A.
Specific gravity:	>1
Vapor press.mmHG@20C	N.D.A.
pH	~ 8.5

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 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.

DISPOSAL BY INCINERATION: Keep in sealed containers between use and final disposal. 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. TRANSPORT INFORMATION

This material is not a hazardous material as defined by 49 CFR 172.101 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!

R20/21/22: HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.

SAFETY PHRASE: S24/25 AVOID CONTACT WITH SKIN AND EYES.

R32: CONTACT WITH ACIDS LIBERATES VERY TOXIC GAS.

R36/37/38: IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

SAFETY SYMBOL: HARMFUL

16. OTHER INFORMATION

Reviewed by	BW, MJ
Revision date	2/01/09
Creation date	12/1/97

This information is believed to be accurate and represents the information currently available to us. However, we make no warranty of merchantability or any other warranty, expressed 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.

Abbreviations: N/A Not Applicable
N.D.A No data available