SAFETY DATA SHEETS

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: DNA STAT-60
Catalog No.: TL-4210, TL-4220

Tel-Test, Inc.
1511 County Road 129 (physical); P.O. Box 1421, Friendswood, Texas 77549 (mailing)
281-482-2672 (office) 800-631-0600 (toll free U.S)

Product Name: DNA STAT-60 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: In the event of an emergency involving a spill, leak, fire exposure or accident call 1-800-424-9300 USA; +1-703-527-3887 International

2. HAZARD IDENTIFICATION

GHS – CLASSIFICATION

Signal Word: Warning

HEALTH HAZARD

Health Class	Hazard Category	Code	Health Hazard Statement
Flammable Liquid	Category 4	H227	Combustible liquid
Acute Toxicity, Oral	Category 5	H303	May be harmful if swallowed
Acute Toxicity, Dermal	Category 5	H313	May be harmful in contact with skin
Skin Corrosion/irritation	Category 3	H316	Causes skin burns and eye damage

PRECAUTIONARY STATEMENTS

Code	Prevention Precautionary Statements
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.
P281	Use personal protective equipment as required.
P301+P312	If swallowed: Call a POISON CENTER or doctor/physician is 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. If may produce hazardous vapors, including nitrous oxide and cyanide, if heated to decomposition. 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	NFPA RATING
Health Hazard 1	Health Hazard 1
Flammability 2	Fire 2
Physical Hazards 0	Reactivity 0
PPE=C	

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 minutes. 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, CO_2, dry chemical powder, alcohol, or polymer foam.

FIREFIGHTING PROCEDURE: 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 station/solution 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: 67°C
Specific Gravity: >1
Vapor Pressure mmHG @20°C: 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 information found. Causes eye and skin irritation. Material is an irritant to mucous membranes and upper respiratory tract. Only selected data is presented here. 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 WASTEWATER: Low concentrations are expected to degrade in biological wastewater treatment facilities.

14. TRANSPORTATION INFORMATION

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

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 SDS contains all required information.
EUROPEAN UNION: Not found.
RISK PHRASE: Warning!

16. OTHER INFORMATION

Rev: 00; 07/19/22

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Tel-Test, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes.

SAFETY DATA SHEETS

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: RNA STAT-60, RNA STAT-50LS
Catalog No.: CS-112, CS-110, CS-111, CS-502, CS-114, CS-115

Tel-Test, Inc.
1511 County Road 129 (physical); P.O. Box 1421, Friendswood, Texas 77549 (mailing)
281-482-2672 (office) 800-631-0600 (toll free U.S)

Product Name: RNA STAT-60, RNA STAT-50LS
Application: Nucleic acid extraction solution for tissue, cells, liquids, and blood.
Synonym: Phenol solution
Chemical Formula: a formulation
Molecular Weight: a formulation

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

2. HAZARD IDENTIFICATION

Emergency Overview

OSHA HAZARDS: Toxic by ingestion, toxic by inhalation, toxic by skin absorption, target organ effect, irritant, corrosive.

Target Organs: Central nervous system, liver, kidney, pancreas, spleen

Other Hazards: Vesicant, rapidly absorbed through the skin

Physical Hazards: Not hazardous

GHS – CLASSIFICATION

Signal Word: Warning

HEALTH HAZARD

Health Class	Hazard Category	Code	Health Hazard Statement
Acute Toxicity, Oral	Category 4	H302	Harmful if swallowed
Acute Toxicity, Dermal	Category 4	H312	Harmful in contact with skin
Skin Corrosion/irritation	Category 1B	H314	Causes skin burns and eye damage
Acute Toxicity, inhalation	Category 4	H332	Harmful if inhaled

PRECAUTIONARY STATEMENTS

Code	**Prevention precautonary statements**
P261	Avoid breathing dust/fumes/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
P280	Wear protective gloves/protective clothing/eye protection/face protection
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.
P403+P233	Store in well-ventilated location. Keep container tightly closed.

Potential Routes of Exposure and Resulting Health Effects

Eyes	Eye contact may be corrosive to tissue, may cause blindness. Acute exposure may result in tearing, conjunctiva swelling, loss of sensation and blurred vision. Chronic exposure or repeated and prolonged exposure to fumes/vapors may cause corneal ulceration, permanent damage or blindness.
Skin	Dermal contact may irritate/inflame the skin, with burning sensation or localized loss of feeling (sensitizer, permeator). Skin is a principle route of entry and toxic quantities may be rapidly absorbed. The amount of tissue damage depends on the duration of exposure to the skin. Prolonged exposure can cause severe chemical burns. On skin, there is an initial local anesthesia followed with a white discoloration. Burns may be severe, but painless due to damage to nerve endings. Itching, scaling, reddening and occasionally blistering can characterize skin exposure. Vapors and liquids may be readily absorbed through the skin to cause systemic effects as detailed in acute inhalation exposure. Chronic, long-term exposure may cause dermatitis, and skin sensitization. Pathologic findings include congestion of the lungs, liver, spleen, kidneys.
Inhalation	Prolonged exposure may cause respiratory tract irritation, injury or arrest. Symptoms of chronic phenol poisoning may include vomiting, difficulty swallowing, diarrhea, anorexia, headache, vertigo, muscle weakness and pain, mental disturbances, dark or smoky urine and possible skin eruptions. Extensive damage to the liver and kidneys may be fatal.
Ingestion	May cause severe burns to the mouth or throat and severe abdominal burning sensation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

HMIS Classification
Health Hazard 3
Chronic Health Hazard
Flammability 1
Physical Hazards 0
PPE=D

NFPA RATING
Health Hazard 3
Fire 1
Reactivity 0

3. COMPOSITION, INFORMATION ON INGREDIENTS

Component		Classification	Concentration
Phenol	CAS-No. 108-95-2 EC-No. 203-632-7 Index-No. 604-001-00-2	Acute Toxin 3; Skin Corr. 1B	<50%
Thiocyanate compounds	NA 0022		<30%
Nonhazardous ingredients	NA 0004		<20%

4. FIRST AID

SKIN CONTACT: Rescuers should wear protective clothing and gloves while treating patients whose skin is contaminated with phenol. Remove contaminated clothing rapidly and irrigate or wipe exposed areas immediately and repeatedly with low-molecular-weight polyethylene glycol (PEG 300 or PEG 400) which can be diluted to 50% for easier application.

Treatment should be continued until there is no detectable odor of RNA STAT 50LS and RNA STAT 60. If PEG is not available, a glycerin solution, olive oil or vegetable oil can be used instead. If these liquids are not available, irrigation with a high-density shower will reduce phenol uptake, but lesser amounts of water will merely dilute the phenol and expand the area of exposure. After treatment with the high-pressure shower, the skin should be washed with soap and water for at least 15 minutes. **Decontamination must begin as soon as possible to minimize phenol absorption**. In case of chemical burns, cover area with sterile, dry dressing, bandage securely, but not too tightly. Get medical attention immediately. Double bag contaminated clothing and personal belongings.

EYE CONTACT: Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

INGESTION: Wash out mouth if vomiting occurs, have person lean forward with head down to avoid breathing in vomit. Seek immediate medical attention. Do not induce vomiting unless directed to do so by medical personnel. Have conscious person drink several glasses of milk or water. Seek immediate hospital medical attention.

INHALATION: Remove the exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. Treat symptomatically and supportively. Oxygen should be administered by qualified personnel. Get medical attention immediately.

Note to attending physician: No known specific antidote. Areas of skin contact smaller than 100 cm^2 may cause a minor health hazard. Systemic doses less than 1 gm may cause a minor health hazard although individual sensitivity may vary. For ingestion exposure: give castor oil or other vegetable oil. Give charcoal slurry if conscious. Treat symptomatically. Observe for 24 hours. Be prepared for emergency cardiovascular intervention. See the following link for additional information: (http://www.cdc.gov/niosh/docs/81-123/pdfs/0493.pdf).

5. FIRE FIGHTING MEASURES

Moderate fire hazard when exposed to heat or flame. Vapor-air mixtures are explosive above flash point. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Fires involving phenol should be fought upwind from the maximum distance possible. Emergency personnel should stay away from low areas and ventilate closed spaces before entry.

Flash point: 110°C D93 Method A

EXTINGUISHING MEDIA: Use Class B extinguishers (oils, hydrocarbon liquids). Dry chemical, carbon dioxide, halon, water spray or standard foam (1987 Emergency Response Guidebook, DOT P 5800.4) for larger fires, use water spray, fog, or standard foam (1987 Emergency Response Guidebook, DOT P 5800.4).

FIREFIGHTING: Evacuate area. Wear positive pressure self-contained breathing apparatus. Extinguish using agents indicated. Phenol is combustible and containers may explode in fire. Avoid breathing toxic fumes produced under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

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

PERSONAL PROTECTIVE EQUIPMENT: Use gloves, boots, Tyvek suit or other impervious covering to avoid skin contact. Use chemical goggles, face shield, or other appropriate eye protection.

SPILL AND LEAK PROCEDURES: Restrict persons not wearing protective equipment from area. Remove all ignition sources. Neutralize spill with slaked lime, sodium bicarbonate or crushed limestone. Collect powdered material and deposit in sealed containers and dispose of phenol as hazardous waste. Isolate area and deny entry.
U.S. DOT EMERGENCY GUIDE # 60
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK # 153
ENVIRONMENTAL PRECAUTIONS: Prevent additional leakage or spillage if safe to do so. Do not let the liquid enter drains and avoid discharge into the environment.

7. HANDLING AND STORAGE

Observe all federal, state, and local regulations when storing or disposing of this substance. Store in an area appropriate for flammables; a cool, dry, well-ventilated location, away from direct sunlight, heat, or sources of ignition. Avoid contact with hypochlorite, strong oxidizers such as chlorine and bromine.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

The current OSHA permissible exposure limit (PEL) for phenol is 5 ppm (19 milligrams per cubic meter) as an 8-hour time-weighted average (TWA) concentration. Use engineering controls to keep airborne levels below exposure limit (the human olfactory phenol detection limit is about 5 ppm).

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.

AIR PURIFYING RESPIRATOR CANISTERS/CARTRIDGES: Stacked cartridge for organic vapors (black ANSI color code, NIOSH approved) plus dust, mist (red ANSI color code, NIOSH approved).

GLOVES AND PROTECTIVE CLOTHING: User must wear appropriate (impervious) clothing and gloves (rubber or neoprene rubber) to prevent any possibility of skin contact with this substance.

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 reagent; 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 a phenol solution is handled, processed, or stored. Always wash hands after using the reagent.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Description:	Red to maroon color with a characteristic sweet, medicinal, or tar-like odor
Boiling point:	Not determined
Melting point:	Not applicable
Vapor pressure:	>0.35 mmHg@25°C
Evaporation rate:	Not determined
Solvent solubility:	Soluble in water, methanol, and glycerol; relatively soluble in aqueous alkali hydroxides, and dimethyl sulfoxide.

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressures.

INCOMPATIBILITIES:
Acetaldehyde: violent reaction.
Aluminum and alloys: may corrode.
Aluminum chloride + nitrobenzene: violent explosion.
1, 3-butadiene, boron trifluoride, and diethyletherate: possible explosion
Calcium hypochlorite: exothermic reaction with possible ignition.
Formaldehyde: possible exothermic reaction.
Lead and alloys: may corrode.

Magnesium and alloys: may corrode.

OXIDIZERS: (strong) Fire and explosion hazard.
Peroxodisulfuric acid: possible explosion.
Peroxomonosulfuric acid: explosion.
Plastics and rubber coatings: may corrode.
Sodium nitrate + trifluoroacetic acid: violent exothermic reaction.
Sodium nitrite: may explode.
Zinc and alloys: may corrode.

DECOMPOSITION: Thermal decomposition products may include toxic oxides of carbon. Polymerization: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

CORROSIVITY: Slightly corrosive in the presence of stainless steel. Non-corrosive in glass or polypropylene containers.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: **Human**: (phenol) 10 mg/kg oral-human LDLO. **Rat**: (phenol) 317 mg/kg LD50 oral; (RNA STAT-60) 673 mg/kg, acute oral LD50; >1000 mg/kg, acute dermal LD50. **Mouse**: (phenol) 270 mg/kg LD50 oral. DOT Dermal Toxicity Test, 49 CFR 173.137, Class 8, Packing Group II.

Consensus Exposure Guidelines

OSHA permissible exposure limit (PEL): (phenol) 5 ppm (19 mg/m^3) as an 8-hour time-weighted average. Skin notation.

NIOSH recommended exposure limit (REL): (phenol) 5 ppm (19 mg/m^3) as a time-weighted average for up to a 10-hour workday and a 40-hour workweek. Short-term exposure limit (STEL): 15.6 ppm (60 mg/m^3) for periods not to exceed 15 minutes. Skin Notation.

ACGIH TLV: (phenol) 5 ppm (19 mg/m^3) as a time-weighted average for up to an 8-hour workday and a 40-hour work week. Skin Notation.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Short-term toxic effects are expected to be limited to the immediate area of environmental release and will be most pronounced in microorganisms.

Environmental fate: Expected to rapidly decompose in the environment.

Environmental Movement and Partitioning: Short-term movement could be due to high water solubility. Movement expected to be limited by relatively rapid environmental detoxification. Phenol is expected to partition strongly into aqueous environmental components.

13. DISPOSAL CONSIDERATIONS

EPA WASTE NUMBER (RCRA HAZARD CLASS) UN1760, 8. All waste disposal activities are subject to federal, state, and local laws and regulations. Handle as hazardous waste. Dispose of contents/containers according to local regulations.

14. TRANSPORTATION INFORMATION

Department of Transportation Hazard Classification (DOT) 49 CFR 172.101; CORROSIVE LIQUID, N.O.S.; UN 1760
Department of Transportation Labeling requirements 49 CFR 172.101; CLASS 8 PACKING GROUP II, PACKING INSTRUCTIONS 851
Department of Transportation Packaging requirements 49 CFR 173.202; EXCEPTIONS: 49 CFR 173.154
Shipping designation: (RNA STAT-60: guanidine thiocyanate-phenol solution).
ERG Code 153

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: Classified as A HAZARDOUS CHEMICAL@ under US OSHA HAZCOM REGULATION.
TSCA: Some constituents of this product included in US EPA Toxic Substance Control Act (40 CFR part 710).
SARA SECTION 302 Threshold Planning Quantity: 500/10,000 lbs.
CERCLA SECTION 103 Reportable quantity: 1000 lbs.
SARA SECTION 304 Reportable quantity: 1000 lbs.
SARA 311/312 Fire hazard, acute health hazard, chronic health hazard
SUBJECT TO SARA SECTION 313 Annual toxic chemical release reporting.

EUROPEAN UNION:
MAC (GERMANY): 5 PPM PHENOL IN AIR, 19 mg/m^3 PHENOL WITH A SKIN WARNING
EINECS#: 2036327
RISK PHRASE: Warning!

R24/25 Toxic in contact with skin and if swallowed
R34 Causes burns

SAFETY PHRASE:

S28 AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF DETERGENT AND WATER.
S45 IN CASE OF ACCIDENT, OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE.

Safety Symbol: Corrosive, Target Organ Toxicity, Irritant

16. OTHER INFORMATION

Rev: 00; 07/26/22

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Tel-Test, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes.

SAFETY DATA SHEETS

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: RNA STAT-60, RNA STAT-50LS
Catalog No.: CS-112, CS-110, CS-111, CS-502, CS-114, CS-115

Tel-Test, Inc.
1511 County Road 129 (physical); P.O. Box 1421, Friendswood, Texas 77549 (mailing)
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Product Name: RNA STAT-60, RNA STAT-50LS
Application: Nucleic acid extraction solution for tissue, cells, liquids, and blood.
Synonym: Phenol solution
Chemical Formula: a formulation
Molecular Weight: a formulation

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

2. HAZARD IDENTIFICATION

Emergency Overview

OSHA HAZARDS: Toxic by ingestion, toxic by inhalation, toxic by skin absorption, target organ effect, irritant, corrosive.

Target Organs: Central nervous system, liver, kidney, pancreas, spleen

Other Hazards: Vesicant, rapidly absorbed through the skin

Physical Hazards: Not hazardous

GHS – CLASSIFICATION

Signal Word: Warning

HEALTH HAZARD

Health Class	Hazard Category	Code	Health Hazard Statement
Acute Toxicity, Oral	Category 4	H302	Harmful if swallowed
Acute Toxicity, Dermal	Category 4	H312	Harmful in contact with skin
Skin Corrosion/irritation	Category 1B	H314	Causes skin burns and eye damage
Acute Toxicity, inhalation	Category 4	H332	Harmful if inhaled

PRECAUTIONARY STATEMENTS

Code	**Prevention precautonary statements**
P261	Avoid breathing dust/fumes/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
P280	Wear protective gloves/protective clothing/eye protection/face protection
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.
P403+P233	Store in well-ventilated location. Keep container tightly closed.

Potential Routes of Exposure and Resulting Health Effects

Eyes	Eye contact may be corrosive to tissue, may cause blindness. Acute exposure may result in tearing, conjunctiva swelling, loss of sensation and blurred vision. Chronic exposure or repeated and prolonged exposure to fumes/vapors may cause corneal ulceration, permanent damage or blindness.
Skin	Dermal contact may irritate/inflame the skin, with burning sensation or localized loss of feeling (sensitizer, permeator). Skin is a principle route of entry and toxic quantities may be rapidly absorbed. The amount of tissue damage depends on the duration of exposure to the skin. Prolonged exposure can cause severe chemical burns. On skin, there is an initial local anesthesia followed with a white discoloration. Burns may be severe, but painless due to damage to nerve endings. Itching, scaling, reddening and occasionally blistering can characterize skin exposure. Vapors and liquids may be readily absorbed through the skin to cause systemic effects as detailed in acute inhalation exposure. Chronic, long-term exposure may cause dermatitis, and skin sensitization. Pathologic findings include congestion of the lungs, liver, spleen, kidneys.
Inhalation	Prolonged exposure may cause respiratory tract irritation, injury or arrest. Symptoms of chronic phenol poisoning may include vomiting, difficulty swallowing, diarrhea, anorexia, headache, vertigo, muscle weakness and pain, mental disturbances, dark or smoky urine and possible skin eruptions. Extensive damage to the liver and kidneys may be fatal.
Ingestion	May cause severe burns to the mouth or throat and severe abdominal burning sensation. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

HMIS Classification
Health Hazard 3
Chronic Health Hazard
Flammability 1
Physical Hazards 0
PPE=D

NFPA RATING
Health Hazard 3
Fire 1
Reactivity 0

3. COMPOSITION, INFORMATION ON INGREDIENTS

Component		Classification	Concentration
Phenol	CAS-No. 108-95-2 EC-No. 203-632-7 Index-No. 604-001-00-2	Acute Toxin 3; Skin Corr. 1B	<50%
Thiocyanate compounds	NA 0022		<30%
Nonhazardous ingredients	NA 0004		<20%

4. FIRST AID

SKIN CONTACT: Rescuers should wear protective clothing and gloves while treating patients whose skin is contaminated with phenol. Remove contaminated clothing rapidly and irrigate or wipe exposed areas immediately and repeatedly with low-molecular-weight polyethylene glycol (PEG 300 or PEG 400) which can be diluted to 50% for easier application.

Treatment should be continued until there is no detectable odor of RNA STAT 50LS and RNA STAT 60. If PEG is not available, a glycerin solution, olive oil or vegetable oil can be used instead. If these liquids are not available, irrigation with a high-density shower will reduce phenol uptake, but lesser amounts of water will merely dilute the phenol and expand the area of exposure. After treatment with the high-pressure shower, the skin should be washed with soap and water for at least 15 minutes. **Decontamination must begin as soon as possible to minimize phenol absorption**. In case of chemical burns, cover area with sterile, dry dressing, bandage securely, but not too tightly. Get medical attention immediately. Double bag contaminated clothing and personal belongings.

EYE CONTACT: Wash eyes immediately, for at least 15 minutes, with large amounts of water, holding upper and lower lids open. Remove contact lenses, if present and it is easy to do so. Get medical attention immediately.

INGESTION: Wash out mouth if vomiting occurs, have person lean forward with head down to avoid breathing in vomit. Seek immediate medical attention. Do not induce vomiting unless directed to do so by medical personnel. Have conscious person drink several glasses of milk or water. Seek immediate hospital medical attention.

INHALATION: Remove the exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. Maintain airway and blood pressure and administer oxygen if available. Treat symptomatically and supportively. Oxygen should be administered by qualified personnel. Get medical attention immediately.

Note to attending physician: No known specific antidote. Areas of skin contact smaller than 100 cm^2 may cause a minor health hazard. Systemic doses less than 1 gm may cause a minor health hazard although individual sensitivity may vary. For ingestion exposure: give castor oil or other vegetable oil. Give charcoal slurry if conscious. Treat symptomatically. Observe for 24 hours. Be prepared for emergency cardiovascular intervention. See the following link for additional information: (http://www.cdc.gov/niosh/docs/81-123/pdfs/0493.pdf).

5. FIRE FIGHTING MEASURES

Moderate fire hazard when exposed to heat or flame. Vapor-air mixtures are explosive above flash point. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flash back. Fires involving phenol should be fought upwind from the maximum distance possible. Emergency personnel should stay away from low areas and ventilate closed spaces before entry.

Flash point: 110°C D93 Method A

EXTINGUISHING MEDIA: Use Class B extinguishers (oils, hydrocarbon liquids). Dry chemical, carbon dioxide, halon, water spray or standard foam (1987 Emergency Response Guidebook, DOT P 5800.4) for larger fires, use water spray, fog, or standard foam (1987 Emergency Response Guidebook, DOT P 5800.4).

FIREFIGHTING: Evacuate area. Wear positive pressure self-contained breathing apparatus. Extinguish using agents indicated. Phenol is combustible and containers may explode in fire. Avoid breathing toxic fumes produced under fire conditions.

6. ACCIDENTAL RELEASE MEASURES

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

PERSONAL PROTECTIVE EQUIPMENT: Use gloves, boots, Tyvek suit or other impervious covering to avoid skin contact. Use chemical goggles, face shield, or other appropriate eye protection.

SPILL AND LEAK PROCEDURES: Restrict persons not wearing protective equipment from area. Remove all ignition sources. Neutralize spill with slaked lime, sodium bicarbonate or crushed limestone. Collect powdered material and deposit in sealed containers and dispose of phenol as hazardous waste. Isolate area and deny entry.
U.S. DOT EMERGENCY GUIDE # 60
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK # 153
ENVIRONMENTAL PRECAUTIONS: Prevent additional leakage or spillage if safe to do so. Do not let the liquid enter drains and avoid discharge into the environment.

7. HANDLING AND STORAGE

Observe all federal, state, and local regulations when storing or disposing of this substance. Store in an area appropriate for flammables; a cool, dry, well-ventilated location, away from direct sunlight, heat, or sources of ignition. Avoid contact with hypochlorite, strong oxidizers such as chlorine and bromine.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

The current OSHA permissible exposure limit (PEL) for phenol is 5 ppm (19 milligrams per cubic meter) as an 8-hour time-weighted average (TWA) concentration. Use engineering controls to keep airborne levels below exposure limit (the human olfactory phenol detection limit is about 5 ppm).

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.

AIR PURIFYING RESPIRATOR CANISTERS/CARTRIDGES: Stacked cartridge for organic vapors (black ANSI color code, NIOSH approved) plus dust, mist (red ANSI color code, NIOSH approved).

GLOVES AND PROTECTIVE CLOTHING: User must wear appropriate (impervious) clothing and gloves (rubber or neoprene rubber) to prevent any possibility of skin contact with this substance.

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 reagent; 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 a phenol solution is handled, processed, or stored. Always wash hands after using the reagent.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Description:	Red to maroon color with a characteristic sweet, medicinal, or tar-like odor
Boiling point:	Not determined
Melting point:	Not applicable
Vapor pressure:	>0.35 mmHg@25°C
Evaporation rate:	Not determined
Solvent solubility:	Soluble in water, methanol, and glycerol; relatively soluble in aqueous alkali hydroxides, and dimethyl sulfoxide.

10. STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressures.

INCOMPATIBILITIES:
Acetaldehyde: violent reaction.
Aluminum and alloys: may corrode.
Aluminum chloride + nitrobenzene: violent explosion.
1, 3-butadiene, boron trifluoride, and diethyletherate: possible explosion
Calcium hypochlorite: exothermic reaction with possible ignition.
Formaldehyde: possible exothermic reaction.
Lead and alloys: may corrode.

Magnesium and alloys: may corrode.

OXIDIZERS: (strong) Fire and explosion hazard.
Peroxodisulfuric acid: possible explosion.
Peroxomonosulfuric acid: explosion.
Plastics and rubber coatings: may corrode.
Sodium nitrate + trifluoroacetic acid: violent exothermic reaction.
Sodium nitrite: may explode.
Zinc and alloys: may corrode.

DECOMPOSITION: Thermal decomposition products may include toxic oxides of carbon. Polymerization: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

CORROSIVITY: Slightly corrosive in the presence of stainless steel. Non-corrosive in glass or polypropylene containers.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: **Human**: (phenol) 10 mg/kg oral-human LDLO. **Rat**: (phenol) 317 mg/kg LD50 oral; (RNA STAT-60) 673 mg/kg, acute oral LD50; >1000 mg/kg, acute dermal LD50. **Mouse**: (phenol) 270 mg/kg LD50 oral. DOT Dermal Toxicity Test, 49 CFR 173.137, Class 8, Packing Group II.

Consensus Exposure Guidelines

OSHA permissible exposure limit (PEL): (phenol) 5 ppm (19 mg/m^3) as an 8-hour time-weighted average. Skin notation.

NIOSH recommended exposure limit (REL): (phenol) 5 ppm (19 mg/m^3) as a time-weighted average for up to a 10-hour workday and a 40-hour workweek. Short-term exposure limit (STEL): 15.6 ppm (60 mg/m^3) for periods not to exceed 15 minutes. Skin Notation.

ACGIH TLV: (phenol) 5 ppm (19 mg/m^3) as a time-weighted average for up to an 8-hour workday and a 40-hour work week. Skin Notation.

12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: Short-term toxic effects are expected to be limited to the immediate area of environmental release and will be most pronounced in microorganisms.

Environmental fate: Expected to rapidly decompose in the environment.

Environmental Movement and Partitioning: Short-term movement could be due to high water solubility. Movement expected to be limited by relatively rapid environmental detoxification. Phenol is expected to partition strongly into aqueous environmental components.

13. DISPOSAL CONSIDERATIONS

EPA WASTE NUMBER (RCRA HAZARD CLASS) UN1760, 8. All waste disposal activities are subject to federal, state, and local laws and regulations. Handle as hazardous waste. Dispose of contents/containers according to local regulations.

14. TRANSPORTATION INFORMATION

Department of Transportation Hazard Classification (DOT) 49 CFR 172.101; CORROSIVE LIQUID, N.O.S.; UN 1760
Department of Transportation Labeling requirements 49 CFR 172.101; CLASS 8 PACKING GROUP II, PACKING INSTRUCTIONS 851
Department of Transportation Packaging requirements 49 CFR 173.202; EXCEPTIONS: 49 CFR 173.154
Shipping designation: (RNA STAT-60: guanidine thiocyanate-phenol solution).
ERG Code 153

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: Classified as A HAZARDOUS CHEMICAL@ under US OSHA HAZCOM REGULATION.
TSCA: Some constituents of this product included in US EPA Toxic Substance Control Act (40 CFR part 710).
SARA SECTION 302 Threshold Planning Quantity: 500/10,000 lbs.
CERCLA SECTION 103 Reportable quantity: 1000 lbs.
SARA SECTION 304 Reportable quantity: 1000 lbs.
SARA 311/312 Fire hazard, acute health hazard, chronic health hazard
SUBJECT TO SARA SECTION 313 Annual toxic chemical release reporting.

EUROPEAN UNION:
MAC (GERMANY): 5 PPM PHENOL IN AIR, 19 mg/m^3 PHENOL WITH A SKIN WARNING
EINECS#: 2036327
RISK PHRASE: Warning!

R24/25 Toxic in contact with skin and if swallowed
R34 Causes burns

SAFETY PHRASE:

S28 AFTER CONTACT WITH SKIN, WASH IMMEDIATELY WITH PLENTY OF DETERGENT AND WATER.
S45 IN CASE OF ACCIDENT, OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE.

Safety Symbol: Corrosive, Target Organ Toxicity, Irritant

16. OTHER INFORMATION

Rev: 00; 07/26/22

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Tel-Test, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes.