

Material Safety Data Sheets



INFUSION TECH

SECTION 1: Identification of the substances/mixtures and of the company/undertaking

Product name : PURE™ Total RNA Extraction kit

Product number : PRG1010

Product component

Product code	Description	Components
PRG1010	PURE™ Total RNA Extraction Kit	· PURE™ Total RNA Extraction Kit Reagent · Manual

Identification of the Company

Company : INFUSION TECH Co., Ltd.

Address : 427, Heungan-daero, Dongan-gu, Anyang-si, Gyeonggi-do,
South Korea

Telephone Number : +82-31-687-3459

Fax Number : +82-31-624-1518

<https://infusiontech.co.kr/contact>

Use for research purpose only. Do not use for diagnostic purposes.

SECTION 2: Hazards identification**GHS Classification**

Acute toxicity, Oral (Category 3)

Acute toxicity, Inhalation (Category 4)

Acute toxicity, Dermal (Category 3)

Skin corrosion/irritation (Category 1)

Serious eye damage/eye irritation (Category 1)

Germ cell mutagenicity (Category 2)

Specific target organ toxicity - repeated exposure (Category 2)

Long-term (chronic) aquatic hazard (Category 2)

GHS-Labeling**Pictogram****Signal Word**

Danger

Hazard statement(s)

H227	Combustible liquid.
H301 + H311	Toxic if swallowed or in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs (Nervous system, Kidney, Liver, Skin) through prolonged or repeated exposure.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)**- Prevention**

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260	Do not breathe mist or vapors.
P264	Wash the contact area thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.

- Response

P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 +	IF IN EYES: Rinse cautiously with water for several minutes. Remove

P338 + P310	contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.

- Storage

P403	Store in a well-ventilated place.
P405	Store locked up.

- Disposal

P501	Dispose of contents and container according to wastes control act.
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Reduced Labelling (<= 100 ml)**Pictogram****Signal Word**

Danger

Hazard statement(s)

None

Precautionary statement(s)

None

Please refer to the MSDS/SDS for further precautionary phrases

Other Hazards which do not result in classification

Contact with acids liberates very toxic gas.

Vesicant., Rapidly absorbed through skin.

SECTION 3: Composition/information on ingredients**Chemical characterization :** Mixtures**Description :** Mixture of the substances listed below with nonhazardous additions.**Dangerous components :**

Component	CAS No.	Classification	Concentration
Phenol	108-95-2	Acute toxicity (oral) 3; Acute toxicity (dermal) 3;	>= 30% - <50%

		Acute toxicity (inhalation) 3; Skin corrosion/irritation 1 (1A/1B/1C); Germ cell mutagenicity 2; Specific target organ toxicity following repeated exposure 2; Chronic hazards to the aquatic environment 2 H301, H311, H314, H331, H341, H373, H411	(v/v)
Guanidine Thiocyanate	593-84-0	Acute toxicity (oral) 4 H302	>=6% - <11% (w/v)
Ammonium Thiocyanate	1762-95-4	Acute toxicity (oral) 4 H302	>=1% - <4% (w/v)
Sodium Acetate	127-09-3	Skin corrosion/irritation 2 H315	>=0.1% - <1.0% (w/v)
Acetic acid	64-19-7	Flammable liquids 3; Corrosive to metals 1; Acute toxicity (dermal) 4; Skin corrosion/irritation 1 (1A/1B/1C); Serious eye damage 1; Specific target organ toxicity following single exposure 1 H226, H290, H312, H314, H318, H370	>=0.05% - <0.25% (w/v)

SECTION 4: First aid measures

In case of eye contact

After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

In case of skin contact

After contact with skin: rinse out with polyethylene glycol 400 or a mixture of polyethylene glycol 300/ethanol 2:1 and wash with plenty of water. If neither is available wash with plenty of water. Immediately take off contaminated clothing. Call a physician immediately.

If inhaled

After inhalation: fresh air. Immediately call in physician. If breathing stops immediately apply artificial respiration, if necessary also oxygen.

If swallowed

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible. Do not attempt to neutralize.

Notes to physician

Treat symptomatically.

General advice

First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

SECTION 5: Firefighting measures

Suitable extinguishing media

Use carbon dioxide (CO₂), or water spray to extinguish fire involving this material. For extinguishment by smothering, use dry sand or soil to extinguish.

For this material, no limitations of extinguishing agents are given.

Specific hazards arising from the chemical

Combustible. Vapors are heavier than air and may spread along floors. Forms explosive mixtures with air on intense heating. Development of hazardous combustion gases or vapors possible in the event of fire.

Special protective actions for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Remove container from danger zone and cool with water. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Environmental precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Absorb spills with inert material (e.g., dry sand or soil) or with liquid-absorbent material (e.g. Chemizorb®). Place in a chemical waste container. Dispose of properly. Remove airborne dust and moisten with water to prevent dispersion. Absorb liquids and flush contaminated area with detergent and water. Clean up affected area.

SECTION 7: Handling and storage**Precautions for safe handling**

Do not handle until all safety precautions statements have been read and understood. Wash handled areas thoroughly after handling. Do not eat, drink, or smoke when using this product. Handle only outdoors or in a well-ventilated area. Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols. Keep away from open flames, hot surfaces, and sources of ignition. Take precautionary measures against static discharge. Follow all MSDS/label precautions as product residue may remain after container is emptied out. Use care in handling/storage. Carefully remove cap before opening. Avoid prolonged or continuous skin contact.

Conditions for safe storage

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to

qualified or authorized persons. Do not store near acids.

SECTION 8: Exposure controls/personal protection

Control parameters

Component	CAS No.	Value	Control parameters	Basis
Phenol	108-95-2	TWA	5 ppm	KR OEL
Guanidine Thiocyanate	593-84-0	No data available		
Ammonium Thiocyanate	1762-95-4	No data available		
Sodium Acetate	127-09-3	No data available		
Acetic acid	64-19-7	TWA	10 ppm	KR OEL & ACGIH
		STEL	15 ppm	

Appropriate engineering controls

Control air levels below exposure limits. If operation generates dust, fumes, or mists, ventilate to keep airborne contamination below exposure limits. Install eyewash stations and safety showers in facilities where this material is stored or used.

Personal protective equipment

Respiratory protection

In case of insufficient ventilation wear respirators and components tested and approved under Appropriate government standards.

Hand protection

Wear suitable gloves. Glove material: Compatible chemical-resistant gloves.

Type	Material	Minimum thickness	Break through time
Full contact	Butyl-rubber	0.3 mm	480 min
Splash contact	Nitrile rubber	0.11 mm	120 min

Eye protection

Tightly fitting safety goggles.

Skin and body protection

Wear suitable protective clothing.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9: Physical and chemical properties

Appearance	Form	Liquid
	Color	Pale-blue
Odor	No data available	
Odor Threshold	No data available	
pH	No data available	
Melting point	No data available	
Initial boiling point	No data available	
Flash point	79°C - closed cup	
Evaporation rate	No data available	
Flammability	No data available	
Lower explosion limit	No data available	
Upper explosion limit	No data available	
Vapor pressure	0.35 mmHg	
Water solubility	Soluble	
Relative vapor density	No data available	
Density	No data available	
Partition coefficient: n-octanol/water	No data available	
Autoignition temperature	715 °C	
Decomposition temperature	No data available	
Viscosity, dynamic	No data available	
Viscosity, kinematic	No data available	
Molecular weight	No data available	

SECTION 10: Stability and reactivity**Chemical stability**

No data available

Possibility of hazardous reactions

Generates dangerous gases or fumes in contact with acids

Conditions to avoid

Heat, flames and sparks. Light. Strong heating.

Incompatible products

Strong oxidizing agents, Strong bases, Strong acids, Metals

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO_x), Sulfur oxides

Other decomposition products - Hydrogen cyanide (hydrocyanic acid)

Thermal decomposition

No data available

SECTION 11: Toxicological information
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Information on likely routes of exposure

A substance that can cause systemic effects if absorbed through mucous membranes, eyes, or skin.

Delayed and immediate effects and also chronic effects from short and long term exposure**Acute toxicity**

Component	Phenol	Guanidine Thiocyanate	Ammonium Thiocyanate	Sodium Acetate	Acetic acid
CAS No.	108-95-2	593-84-0	1762-95-4	127-09-3	64-19-7
Acute toxicity					
Oral (LD50)	340 mg/kg (Rat)	593 mg/kg (Rat)	500 ~ 1000 mg/kg (Rat)	3530 mg/kg (Rat)	3310 mg/kg (Rat)
Dermal (LD50)	660 mg/kg (Rabbit)	>2000 mg/kg (Rabbit)	No data available	>10000 mg/kg (Rabbit)	1060 mg/kg (Rabbit)
Inhalation (LC50)	>1.27 mg/kg (Rat, 8 hr)	>0.853 mg/l (Rat, 4 hr)	No data available	30000 mg/m ³ (Rat)	16000 ppm (Rat, 4 hr)
Skin corrosion/irritation	Positive (OECD TG 431, GLP)	0/4, 1C (OECD TG 404, GLP)	Negative	Positive (24 hr, Rabbit, IUCLID)	Positive (PATTY, ACGIH)
Serious eye damage/eye irritation	No data available	No data available	Positive	Positive (Rabbit, IUCLID)	Positive (ACGIH, IUCLID)
Respiratory sensitization	No data available	No data available	No data available	No data available	No data available
Skin sensitization (OECD TG 406,	Negative	Negative	Negative	No data available	No data available

GLP)					
Carcinogenicity					
Occupational Safety and Health Act	Special Management Materials	No data available	No data available	No data available	No data available
Public notice of the Ministry of Employment and Labor	No data available	No data available	No data available	No data available	No data available
IARC	3	No data available	No data available	No data available	No data available
OSHA	No data available	No data available	No data available	No data available	No data available
ACGIH	A4	No data available	No data available	No data available	No data available
NTP	No data available	No data available	No data available	No data available	No data available
EU CLP	No data available	No data available	No data available	No data available	No data available
Germ cell mutagenicity					
Germ cell mutagenicity	Positive (OECD Guideline 473)	Negative (OECD Guideline 471)	Negative (EU IUCLID)	Negative (IUCLID)	Negative (OECD Guideline 471)
	Positive (OECD Guideline 474)				Negative (OECD Guideline 473)
Reproductive toxicity	Negative	Negative	No data available	No data available	Negative
Specific target organ toxicity					
Single exposure	Serious systemic effect	Minor toxicity but recovered (Rat, OECD TG 401, GLP)	No data available	Eye, skin (IPCS)	Serious systemic effect (PATTY, ACGIH, ICSC)
Repeated exposure	Serious damage	NOAEL=100 mg/kg (Rat, OECD TG 408, GLP)	No data available	Negative (IUCLID)	Lethality 10 mg=33% 20 mg=50% (NOAEL=290 mg/kg, 32 weeks)
Aspiration hazard	No data available	No data available	No data available	No data available	No data available

Other adverse effects : No data available.

SECTION 12: Ecological information

Ecological toxicity

The environmental impact of this product has not been fully investigated.

Component	Phenol	Guanidine Thiocyanate	Ammonium Thiocyanate	Sodium Acetate	Acetic acid
CAS No.	108-95-2	593-84-0	1762-95-4	127-09-3	64-19-7
Aquatic toxicity					
Fish (LC50)	8.9 mg/l (96 hr, Oncorhynchus mykiss)	89.1 mg/l (96 hr Poecilia reticulata)	570000 mg/l	14500000 mg/l (96 hr)	31.3 ~ 67.6 mg/l (96 hr, Oncorhynchus mykiss)
Crustacean (EC50)	3.1 mg/l (48 hr, Ceriodaphnia dubia)	42.4 mg/l (48 hr, Daphnia magna)	455000 mg/l (48 hr, Daphnid)	10500000 mg/l (48 hr)	18.9 mg/l (48 hr, Daphnia magna)
Aquatic algae (EC50)	61.1 mg/l (96 hr, Selenastrum capricornutum)	130 mg/l (72 hr, Desmodesmus subspicatus)	223000 mg/l (96 hr, green algae)	4700000 mg/l (96 hr)	4.51 mg/l (72 hr, Anabaena flos-aquae)
Persistence	log Kow 1.47	log Kow -1.11	log Kow - 2.29	log Kow - 3.72	log Kow -0.17
Degradation	No data available	No data available	No data available	No data available	No data available
Bioaccumulative potential					
Concentration	17.5 ~ 647 (OECD TG 305E, GLP)	No data available	3.162	No data available	No data available
Biodegradable	62% 100 hr (OECD TG 301F)	32% 28 day	No data available	100% 5 day	96% 20 day
Mobility in soil	14 ~ 73 Koc (OECD TG 121)	No data available	No data available	No data available	1.153 Koc
Other adverse effects	Cirrhina mrigala : NOEC=0.077 mg/L (60 days, GLP, OECD TG 204)	No data available	No data available	No data available	72h-NOEC : Skeletonema costatum = 1000 mg/L

SECTION 13: Disposal considerations

Disposal methods

Dispose of contents/container in accordance with local regulation. The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in according to approved disposal technique. Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations. Do not empty into

drains. Do not dispose of waste into sewer.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information**IATA/ADR/DOT-US/IMDG**

Classified as dangerous in the meaning of transport regulations

UN number or ID number

UN1760

UN proper shipping name

Corrosive liquid, n.o.s. (Phenol-Guanidine thiocyanate solution)

Transport hazard class(es)

8

Packing group

2

Environmental hazards

Not hazardous

Special precautions for user

Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

SECTION 15: Regulatory information**Occupational Safety and Health Act in Korea**

Component	CAS No.	Detail information
Phenol	108-95-2	· Harmful Agents Subject to Work Environment Monitoring (Measurement cycle : 6 Months) · Hazardous Substances Subject to Control · Harmful Agents Subject to Workers Requiring Health Examination (Diagnostic cycle : 12 Months) · Special management materials · Threshold Limit Values (TLVs) chemicals
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable

Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Harmful Agents Subject to Work Environment Monitoring (Measurement cycle : 6 Months) · Hazardous Substances Subject to Control · Threshold Limit Values (TLVs) chemicals

Chemicals Control Act in Korea

Component	CAS No.	Detail information
Phenol	108-95-2	· Toxic Chemicals · Accident Precaution Chemicals
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable

Safety Control of Dangerous Substances Act in Korea

Component	CAS No.	Detail information
Phenol	108-95-2	· Not applicable
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Class 4 : Category 2 petroleum (aqueous)

Wastes Control Act in Korea

Component	CAS No.	Detail information
Phenol	108-95-2	· Designated waste
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Designated waste
Acetic acid	64-19-7	· Designated waste

Other regulations in KOREA and Abroad regulations**Korean Regulation**

Not applicable

Component	CAS No.	Detail information
Persistent Organic Pollutants (POPs) Control Act		
Phenol	108-95-2	· Not applicable
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable

Abroad Regulations

Component	CAS No.	Detail information
U.S.A. management information(OSHA regulation)		
Phenol	108-95-2	· Not applicable
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable
U.S.A. management information(CERCLA regulation)		
Phenol	108-95-2	· 453.599kg 1000 lb
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· 2267.995 kg 5000 lb
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· 2267.995kg 5000 lb
U.S.A. management information(EPCRA 302 regulation)		
Phenol	108-95-2	· 226.7995/4535.99kg 500/10000lb
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable
U.S.A. management information(EPCRA 304 regulation)		
Phenol	108-95-2	· 453.599kg 1000lb
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable

Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable
U.S.A. management information(EPCRA 313 regulation)		
Phenol	108-95-2	· Applicable
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable
U.S.A. management information(Rotterdam Convention on Substances)		
Phenol	108-95-2	· Not applicable
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable
U.S.A. management information(Stockholm Convention on Substances)		
Phenol	108-95-2	· Not applicable
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable
U.S.A. management information(Mont- real Protocol on Substances)		
Phenol	108-95-2	· Not applicable
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Not applicable
EU Classification (CLASSIFICATION)		
Phenol	108-95-2	· Muta. 2 Acute Tox. 3 * Acute Tox. 3 * Acute Tox. 3 * STOT RE 2 · * Skin Corr. 1B · H341 H331 H311 H301 H373 ** H314
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· Flam. Liq. 3 Skin Corr. 1A · H226 H314
EU Classification (Risk Phrases)		
Phenol	108-95-2	· R: 23/24/25-34-48/20/21/22-68
Guanidine Thiocyanate	593-84-0	· Not applicable

Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· R: 10-35
EU Classification (Safety Phrases)		
Phenol	108-95-2	· S: (1/2-)24/25-26-28-36/37/39-45
Guanidine Thiocyanate	593-84-0	· Not applicable
Ammonium Thiocyanate	1762-95-4	· Not applicable
Sodium Acetate	127-09-3	· Not applicable
Acetic acid	64-19-7	· S: (1/2-)23-26-45

SECTION 16: Other information

Date of issue : 2024.04.18

Version : 1.01

It should be noted that this SDS is intended to assist purchasers, handlers or third parties in the safe handling of the material and that no warranty can be made and no technical or legal liability can be assumed as to its fitness for any particular purpose or commercial application or representation of its use in combination with other materials.

Since this SDS does not contain all hazardous information, no liability is assumed for any damage caused by handling or contact with the product.

The information contained in this SDS may vary by country and region and may not be consistent with actual applicable regulations, and it is the responsibility of the purchaser and handler to verify and comply with government and local regulations.