

# Material Safety Data Sheet

## FavorPrep™ Tri-RNA Reagent

	Cat. No.:	FATRR 000	FATRR 001	FATRR 002
Contents				
Tri-RNA Reagent		5 ml	100 ml	50 ml

**Favorgen Biotech Corp.**

Address: Ping-Tung Agricultural Biotechnology Park  
No. 8-1, Yuanxi 2<sup>nd</sup> Road, Ping Tung 908126,  
TAIWAN

Phone Number: +886-8-762-1829

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# Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



## Section 1. IDENTIFICATION

### 1.1 Product Identifier

Commercial Product Name: Tri-RNA Reagent

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Product form: Laboratory chemical mixture/Lysis Buffer

Relevant identified uses: For research use only, not for diagnostic use.

Uses advised against:  
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### 1.3 Details of the supplier of the safety data sheet

Company: Favorgen Biotech Corp.

Address: Ping-Tung Agricultural Biotechnology Park No. 8-1, Yuanxi 2<sup>nd</sup> Road, Ping Tung 908126, TAIWAN

Phone Number: +886-8-762-1829

### 1.4 Emergency telephone number

+886-8-762-1829

## Section 2. HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

Hazard identification Hazard classes/categories

Acute oral toxicity (Oral)	Category 4
Acute toxicity (Inhalation)	Category 3
Acute toxicity (Dermal)	Category 3
Skin corrosion	Category 1C
Serious eye damage	Category 1
Germ cell mutagenicity	Category 2
Specific target organ toxicity - repeated exposure	Category 2

GHS hazard pictograms:



GHS05



GHS06



GHS08

Signal word: **DANGER**

Hazard statement(s)

H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled.
H314	Causes severe skin burns and eye damage.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe mist or vapors.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove 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.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

# Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



## 2.2 Label elements

According to section 1.5.2 of Annex I to CLP

GHS symbol



GHS05



GHS07



GHS08

DANGER

## 2.3 Other hazards

Not applicable

## Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances or 3.2 Mixtures

Chemical:	<b>Guanidinium thiocyanate</b>	CAS No.: 593-84-0
Concentration:	20~50%	
Chemical:	<b>Phenol</b>	CAS No.: 108-95-2
Concentration:	40~60%	

## Section 4. FIRST AID MEASURES

### 4.1 Description of first-aid measures

#### If inhaled

After inhalation: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

#### In case of skin contact

After skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.

#### In case of eye contact

After eye contact: Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses. Protect unharmed eye.

#### If swallowed

After swallowing: If accidentally swallowed obtain immediate medical attention. Rinse mouth with water. Never give anything by mouth to an unconscious person.

#### Most important symptoms and effects, both acute and delayed

Toxic if swallowed, in contact with skin or if inhaled. Causes serious eye damage. Suspected of causing genetic defects. May cause damage to organs through prolonged or repeated exposure. Causes severe burns.

### 4.2 Most important symptoms and effects, both acute and delayed

H301 - Toxic if swallowed.

H311 - Toxic in contact with skin.

H331 - Toxic if inhaled.

H314 - Causes severe skin burns and eye damage.

H335 - May cause respiratory irritation.

H341 - Suspected of causing genetic defects.

H373 - May cause damage to organs through prolonged or repeated exposure.

H412 - Harmful to aquatic life with long lasting effects.

### 4.3 Indication of any immediate medical attention and special treatment needed

If skin irritation occurs: Get medical advice/ attention. Wear protective gloves/protective clothing and eye/face protection. IF exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell.

## Section 5. FIRE-FIGHTING MEASURES

### 5.1 Extinguishing media

Water spray. Carbon dioxide (CO<sub>2</sub>). Foam. Dry chemical.

### 5.2 Special hazards arising from the substance or mixture

None.

### 5.3 Advice for firefighters

# Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



No specific fire or explosion hazard.

## 5.4 Additional Information

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## Section 6. ACCIDENTAL RELEASE MEASURE

### 6.1 Personal precautions, protective equipment, and emergency procedures

Do not breathe vapours/Ensure adequate ventilation/Avoid contact with skin, eyes or clothing/Use personal protection equipment/Regular staff training is necessary.

### 6.2 Environmental precautions

Do not allow mixture to enter ground water system.

### 6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material.

### 6.4 Reference to other sections

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## Section 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Use personal protective equipment as required. No special handling advices are necessary.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep in a dry, cool, and well-ventilated place.

### 7.3 Specific end use(s)

For research use only.

## Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters: None

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters/ Permissible concentration	Basis
Phenol	108-95-2	TWA	5 ppm	ACGIH
		TWA	5 ppm 19 mg/m <sup>3</sup>	OSHA Z-1
		TWA	5 ppm 19 mg/m <sup>3</sup>	OSHA P0
		C	15.6 ppm 60 mg/m <sup>3</sup>	NIOSH REL
		TWA	5 ppm 19 mg/m <sup>3</sup>	NIOSH REL

Components	CAS-No.	Parameters	Value	Biological specimen	Basis	Sampling time
Phenol	108-95-2	Phenol	250 mg/g Creatinine	Urine	ACGIH BEI	End of shift (As soon as possible after exposure ceases)

### 8.2 Exposure controls

Good ventilation and exhaust system in the workplace, and the floor has drainage and washing facilities, which can resist the erosion of chemicals. Must maintain the highest level of cleanliness in the workplace.

#### Personal protective equipment

**Eye/face protection:** Safety glasses. Used to prevent splash hazards. Government standards such as NIOSH (US) or EN 166(EU).

**Skin protection:** Recommended to avoid contamination with these hazards.

**Hand protection:** Protective gloves, use for short times chemical resistant latex gloves with code EN 374-3 level 1.

**Respiratory protection:** Not necessary, if the workplace is well-ventilated.

# Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



**Personal Hygiene:** Wash hands before breaks and at the end of work. Handle in accordance with good industrial hygiene and safety practice.

## Section 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

Appearance: liquid/Odor: characteristic/pH: 3.0~5.0

### 9.2 Other information

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## Section 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

Decompositions are not observed during the expiration period under recommended conditions.

### 10.2 Chemical stability

Decompositions are not observed during the expiration period under recommended conditions.

### 10.3 Possibility of hazardous reactions

**Note:** Thiocyanates can develop poisonous gas in contact with strong acids. Keep away from oxidizing agents, and acidic or alkaline.

### 10.4 Conditions to avoid

Not necessary.

### 10.5 Incompatible materials

Note: Avoid contact with strong acids or alkaline.

### 10.6 Hazardous decomposition products

Decompositions are not observed during the expiration period under recommended conditions.

## Section 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

#### Harmful if swallowed

Chemical Name	Oral LD50 (Rat)	Dermal LD50 (Rabbit)	Inhalation LC50 (Rat)
Guanidinium thiocyanate CAS No.: 593-84-0	1,578 mg/kg	2,926 mg/kg	29.26 mg/l Exposure time: 4 h/vapor
Phenol CAS No.: 108-95-2	317 mg/kg	630 mg/kg	900 mg/m <sup>3</sup> Exposure time: 8 h

#### Skin corrosion/irritation

Skin irritation

#### Serious eye damage/irritation

Causes eye damage

#### Respiratory or skin sensitization

Not Classified

#### Germ cell mutagenicity

Product is or contains a chemical which may cause mutations in the germ cells of humans.

#### Carcinogenicity

Not Classified

#### Reproductive toxicity

Not Classified

#### Specific target organ toxicity (STOT) – single exposure

May cause respiratory irritation

#### Specific target organ toxicity (STOT) – repeated exposure

May cause damage to organs through prolonged or repeated exposure.

#### Aspiration hazard

Not Classified

### 11.2 Information on other hazards

No data available.

## Section 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

# Material Safety Data Sheet

According to Regulation (EC) No 1907/2006



Following information is valid for pure substances.

## Guanidinium thiocyanate

CAS No.: 593-84-0LC50

Toxicity to fish:

LC50 (Poecilia reticulata (guppy)): 89.1 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 (Daphnia): 42.4 mg/l

Exposure time: 48 h

Toxicity to fish (Chronic toxicity):

NOEC (Poecilia reticulata (guppy)): 25 mg/l

Exposure time: 96 d

## Phenol

CAS No.: 108-95-2

Toxicity to fish:

LC50 (Onchorhynchus clarki): 8.9 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates:

EC50 (Ceriodaphnia dubia (Water flea)): 3.1 mg/l

Exposure time: 48 h

Toxicity to algae/aquatic plants:

EC50 (Pseudokirchneriella subcapitata (Algae)): 61.1 mg/l

Exposure time: 96 h

Toxicity to bacteria:

IC50 (Microorganisms): 21 mg

Exposure time: 24 h

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

No data available.

### 12.4 Mobility in soil

No data available.

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Endocrine disrupting properties

No data available.

### 12.7 Other adverse effects

No additional data available.

## Section 13. DISPOSAL CONSIDERATIONS

Refer to local regulations.

### 13.1 Waste treatment methods

Dispose of contents/container in accordance with local regulation.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

## Section 14. TRANSPORT INFORMATION

### 14.1 UN number

ADR/RID: UN1760

IMDG: UN1760

IATA: UN1760

### 14.2 UN proper shipping name

ADR/RID: Corrosive liquid, n.o.s.  
(phenol - guanidine thiocyanate)

IMDG: Corrosive liquid, n.o.s.  
(phenol - guanidine thiocyanate)

IMDG: Corrosive liquid, n.o.s.  
(phenol - guanidine thiocyanate)

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According to Regulation (EC) No 1907/2006



solution)	solution)	solution)
<b>14.3 Transport hazard class(es)</b> ADR/RID: 8	IMDG: 8	IATA: 8
<b>14.4 Packaging group</b> ADR/RID: II	IMDG: II	IATA: II
<b>14.5 Environmental hazards</b> ADR/RID: Yes	IMDG Marine pollutant: Yes	IATA-DGR: No
<b>14.6 Special precautions for user</b> None.		
<b>14.7 Maritime transport in bulk according to IMO instruments</b> Not Applicable.		
<b>Further information</b> Not classified as dangerous in transport regulations.		

## Section 15. REGULATIONS INFORMATION

**15.1 Safety, health, and environmental regulations/legislation specific for the substance or mixture**  
Look for your country-specific regulations.

**15.2 Chemical safety assessment**  
Not necessary.

## Section 16. OTHER INFORMATION

**16.1 List of R, H and P phrases**  
Full text of H-Statements referred to under sections 2 and 3.

**16.2 Training Advice**  
Regular safety training.

**16.3 Recommended Restriction on Use**  
Only for professional/research user.