SAFETY DATA SHEET

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Revision Number	3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name	Guanidine thiocyanate
Product code	CH-PDR-GSCN01/03/05
CAS Number	593-84-0
Brand	GMExpression

1.2 Other means of identification

Guanidine rhodanide; Guandine thiocyanate; Thiocyanic acid guanidine salt

1.3 Relevant identified uses and uses advised against

Identified uses:	For laboratory research use only.
Uses advised against:	This product should not be used for any other uses.

1.4 Details of the supplier of the safety data sheet

Company:	General Molecular Expression Service Pty Ltd. LG21 Waite Building, Waite Road, SA 5064 AUSTRALIA
E-mail:	support@gmexpression.com

1.5 Emergency telephone

Emergency Phone	Company emergency call (24/7): +61 481 192 170

SECTION 2: Hazards identification

2.1 GHS Classification

Acute toxicity - Category 4, Oral
Acute toxicity - Category 4, Dermal
Skin corrosion, Sub-category 1C
Serious eye damage, Category 1
Acute toxicity - Category 4, Inhalation
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 3

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word Danger

Hazard statement(s)

H302+H312+H332	Harmful if swallowed, in contact with skin or if inhaled
H314	Causes severe skin burns and eye damage
H412	Harmful to aquatic life with long lasting effects

Precautionary statement(s)

Prevention	
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash skin thoroughly using plenty water after handling.
P270	DO NOT eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/etc.
Response	
P301+P330+P331	IF SWALLOWED: Rinse mouth using plenty water. 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+P338+P310	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.
Storage	
P405	Store locked up.
Disposal	
P501	Dispose of contents and container to an approved waste service agent.

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

3.1 Substance

Formula: $CH_5N_3 \cdot CHNS$
Molecular weight: 118.16 g/mol

Hazardous ingredients

Component	Classification	Concentration
Guanidinium, thiocyanate		
CAS No. 593-84-0 EC No. 209-812-1	Acute Tox. 4; Skin Corr./Irrit. 1C; Eye Dam./Irrit. 1; H302, H332, H312, H314, H318	>=99%, <= 100%

SECTION 4: First aid measures

4.1 Description of first-aid measures

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

In case of skin contact
Rinse skin with plenty of water. Take off all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.

In case of eye contact
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call-in ophthalmologist.

If inhaled
If breathed in, move person into fresh air. Immediately call-in physician. If breathing stops: immediately apply artificial respiration, if necessary, also oxygen.

If swallowed
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO_2) Dry powder.

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides.
Nitrogen oxides (NOx)
Sulfur oxides
Combustible.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus. Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid inhalation of dusts. Evacuate the danger area, observe emergency procedures, and consult an expert.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling
Work under hood. Do not inhale substance/mixture.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities Storage conditions

Store conditions
Keep container tightly closed in a dry and well-ventilated place.
Do not store near acids.
Light sensitive. Hygroscopic. Suggest store under inert gas.
Keep locked up or in an area accessible only to qualified or authorised persons.

Store class
Storage class (TRGS 510): 8A: Combustible, corrosive hazardous materials.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.3 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Change contaminated clothing. Wash hands after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.

Body Protection
Impervious clothing.

Respiratory protection
Required when dusts are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

A) Physical state	Solid
B) Colour	White
C) Odour	No data available
D) Melting point	118.0-121.0°C
E) Initial boiling point and boiling range	189°C
F) Flammability (solid, gas)	No data available
G) Upper/lower flammability or explosive limits	No data available
H) Flash point	65°C (lit)
I) Autoignition temperature	Remarks: No self-ignition observed under the test conditions
J) Decomposition temperature	No data available
K) PH	No data available
L) Viscosity	
Viscosity, kinematic:	No data available
Viscosity, dynamic:	No data available
M) Water solubility	Ca. 636 g/L. Temperature:25 °C. pH: Ca. 5.1. N-octanol
N) Partition coefficient n-octanol/water:	log Pow = -1.11. Temperature:25°C
O) Vapour pressure	< 0 Pa. Temperature: Ca. 20 °C.; < 0 Pa. Temperature: Ca. 25 °C.; < 0 Pa. Temperature: Ca. 50 °C.
P) Density	Ca. 1.29 relative density has no dimension. Temperature:25 °C
Relative density	No data available
Q) Relative vapour density	No data available
R) Particle characteristics	No data available
S) Explosive properties	No data available
T) Oxidizing properties	No data available

9.2 Other safety information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

Contact with acids liberates very toxic gas.

10.2 Chemical stability

Chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
A risk of explosion and/or of toxic gas formation exists with the following substances:
Acids

Generates dangerous gases or fumes in contact with:
Acids

10.4 Conditions to avoid
Contact with acids liberates very toxic gas.

10.5 Incompatible materials
No data available.

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral – Rat (female) - 593 mg/kg bw.
Inhalation: LC50 - rat (male/female) - > 0.853 mg/L air (analytical).
Dermal: LD50 - rabbit (male/female) - > 2 000 mg/kg bw.

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity
No data available

Reproductive toxicity
No data available

Specific target organ toxicity -single exposure
No data available

Specific target organ toxicity -repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - 90 Days - NOAEL (No observed adverse effect level) - 100 mg/kg
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
After absorption of large quantities:
Systemic effects: ataxia (impaired locomotor coordination)
Convulsions
Coma
Other dangerous properties cannot be excluded.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish: LC50 - Poecilia reticulata - ca. 89.1 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 42.4 mg/L - 48 h.

Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - 130 mg/L - 72 h.

Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 185 mg/L - 28 d. Remarks:Inhibition of degradation.

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing.

Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured

to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1759 IMDG: 1759 IATA-DGR: 1759

14.2 UN proper shipping name

ADR/RID:	Corrosive solid, N.O.S. (Guanidinium thiocyanate)
IMDG:	Corrosive solid, N.O.S. (Guanidinium thiocyanate)
IATA-DGR:	Corrosive solid, N.O.S. (Guanidinium thiocyanate)

14.3 Transport hazard classes

ADR/RID: 8	IMDG: 8	IATA-DGR: 8

14.4 Packaging group

ADR/RID: III	IMDG: III	IATA-DGR: III

14.5 Environmental hazards

ADR/RID: no	IMDG Marine pollutant: no	IATA-DGR: no

14.6 Special precautions for user

None

14.7 Incompatible materials

Further information

Hazchem Code: 2X

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation

Therapeutic Goods (Poisons Standard) Instrument: No poison schedule number allocated.

SECTION 16: Other information

Disclaimer

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