

Safety Data Sheet acc. to OSHA HCS

Printing date 11/17/2023

Revision date 11/17/2023

1 Identification

- **Product identifier**
- **Trade name: cGAS Reaction Buffer (2X)**
- **Synonym** C6orf150; 2'3'-cGAMP Synthase; Cyclic GMP-AMP Synthase
- **Article number:** 701931
- **Application of the substance / the mixture**
This product is for research use - Not for human or veterinary diagnostic or therapeutic use.
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Cayman Chemical Co.
1180 E. Ellsworth Rd.
Ann Arbor, MI 48108
USA
- **Information department:** Product safety department
- **Emergency telephone number:**
During normal opening times: +1 (734) 971-3335
US/CANADA: 800-424-9300
Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Specific Target Organ Toxicity - Repeated Exposure H373 May cause damage to organs through prolonged or repeated exposure.

- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS08

- **Signal word** Warning
- **Hazard-determining components of labeling:**
Sodium chloride
- **Hazard statements**
H373 May cause damage to organs through prolonged or repeated exposure.

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- **Precautionary statements**

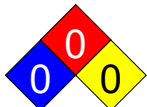
P260 Do not breathe dust/fume/gas/mist/vapors/spray.

P314 Get medical advice/attention if you feel unwell.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



HEALTH 0 Health = 0

FIRE 0 Fire = 0

REACTIVITY 0 Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**

- **Description:** Mixture of the substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 7647-14-5 RTECS: VZ4725000	Sodium chloride	1.6%
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- **Other ingredients**

CAS: 7732-18-5 RTECS: ZC0110000	Water	97.8105%
CAS: 7558-79-4 RTECS: WC4500000	Sodium phosphate, Dibasic	0.28%
CAS: 9048-46-8 RTECS: AY9296000	Albumin, bovine	0.2%
CAS: 7778-77-0 RTECS: TC6615500	Potassium phosphate, Monobasic	0.048%
CAS: 7447-40-7 RTECS: TS8050000	Potassium chloride	0.04%
CAS: 7791-18-6 RTECS: OM2975000	Magnesium chloride, hexahydrate	0.016%
CAS: 7646-85-7 RTECS: ZH1400000	Zinc chloride	0.005%
CAS: 26172-55-4 RTECS: NX8156850	Methylchloroisothiazolinone	0.0004%
	Methylisothiazolinone	<0.0015%

- **Additional information:**

The specific chemical identity of composition and exact percentage is being withheld as a trade secret. The specific chemical identity and exact percentage is made available to health professionals, employees, and designated representatives in accordance with the applicable provisions of paragraph §1910.1200.

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4 First-aid measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
Use fire fighting measures that suit the environment.
A solid water stream may be inefficient.
- **Special hazards arising from the substance or mixture**
67-56-1 During heating or in case of fire poisonous gases are produced.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.
- **Environmental precautions:** Dilute with plenty of water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
- **Protective Action Criteria for Chemicals**

- **PAC-1:**

7778-77-0	Potassium phosphate, Monobasic	9.6 mg/m ³
7791-18-6	Magnesium chloride, hexahydrate	34 mg/m ³
7646-85-7	Zinc chloride	2 mg/m ³
26172-55-4	Methylchloroisothiazolinone	0.6 mg/m ³

- **PAC-2:**

7778-77-0	Potassium phosphate, Monobasic	110 mg/m ³
7791-18-6	Magnesium chloride, hexahydrate	370 mg/m ³

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7646-85-7	Zinc chloride	800 mg/m ³
26172-55-4	Methylchloroisothiazolinone	6.6 mg/m ³
· PAC-3:		
7778-77-0	Potassium phosphate, Monobasic	630 mg/m ³
7791-18-6	Magnesium chloride, hexahydrate	1,600 mg/m ³
7646-85-7	Zinc chloride	4,800 mg/m ³
26172-55-4	Methylchloroisothiazolinone	40 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**
Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
Keep container tightly closed.
Store in accordance with information listed on the product insert.
- **Storage:** Store in accordance with information listed on the product insert.
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
- **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
- **Protection of hands:**



Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

- **Form:**

Liquid

- **Color:**

According to product specification

- **Odor:**

Characteristic

- **Odor threshold:**

Not determined.

- **Formulation**

6 ml of 2X assay reaction buffer

- **pH-value at 20 °C (68 °F):**

7.4

- **Change in condition**

- **Melting point/Melting range:**

0 °C (32 °F)

- **Boiling point/Boiling range:**

100 °C (212 °F)

- **Flash point:**

Not applicable.

- **Flammability (solid, gaseous):**

Not applicable.

- **Decomposition temperature:**

Not determined.

- **Ignition temperature:**

Product is not selfigniting.

- **Danger of explosion:**

Product does not present an explosion hazard.

- **Explosion limits:**

- **Lower:**

Not determined.

- **Upper:**

Not determined.

- **Vapor pressure at 20 °C (68 °F):**

23 hPa (17.3 mm Hg)

- **Density at 20 °C (68 °F):**

1 g/cm³ (8.345 lbs/gal)

- **Relative density**

Not determined.

- **Vapor density**

Not determined.

- **Evaporation rate**

Not determined.

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- | | |
|---|--|
| · Solubility in / Miscibility with Water: | Fully miscible. |
| · Partition coefficient (n-octanol/water): | Not determined. |
| · Viscosity: | |
| Dynamic at 20 °C (68 °F): | 0.952 mPas |
| Kinematic: | Not determined. |
| · Solvent content: | |
| Water: | 97.8 % |
| VOC content: | 0.00 % |
| | 0.0 g/l / 0.00 lb/gal |
| Solids content: | 2.2 % |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

7647-14-5 Sodium chloride

Oral	LDLO	1,000 mg/kg (man)
	TDLO	650 ml/kg (man)
	LD50	4,000 mg/kg (mouse) 3,000 mg/kg (rat)
Inhalative	LD50	4 g/kg (mouse)
	LC50	320 mg/m ³ (mouse)
	TCLO	0.63 mg/m ³ (human)
Irritation of skin	LCLO	29,300 mg/m ³ /7h (mouse)
	Irritation	500 mg/24h (rabbit) mild
Irritation of eyes	Irritation	100 mg/24h (rabbit) moderate
	Intraperitoneal LD50	2,602 mg/kg (mouse)
	Subcutaneous LD50	31.6 mg/kg (rat)

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Intravenous LD50	59.5 mg/kg (rat)
Data	15 mg/3D (human) mild
Subcutaneous LD50	3 g/kg (mouse)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:

- **Carcinogenic categories**

- **IARC (International Agency for Research on Cancer)**

None of the ingredients is listed.

- **NTP (National Toxicology Program)**

None of the ingredients is listed.

- **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not hazardous for water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

<ul style="list-style-type: none"> · UN-Number · DOT, IMDG, IATA 	not regulated
<ul style="list-style-type: none"> · UN proper shipping name · DOT, IMDG, IATA 	not regulated
<ul style="list-style-type: none"> · Transport hazard class(es) · DOT, ADN, IMDG, IATA · Class 	not regulated
<ul style="list-style-type: none"> · Packing group · DOT, IMDG, IATA 	not regulated
<ul style="list-style-type: none"> · Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · Special precautions for user 	Not applicable.
<ul style="list-style-type: none"> · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code 	Not applicable.
<ul style="list-style-type: none"> · UN "Model Regulation": 	not regulated

15 Regulatory information

<ul style="list-style-type: none"> · Safety, health and environmental regulations/legislation specific for the substance or mixture No further relevant information available. · Sara 		
<ul style="list-style-type: none"> · Section 355 (extremely hazardous substances): 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · Section 313 (Specific toxic chemical listings): 		
7646-85-7	Zinc chloride	
<ul style="list-style-type: none"> · TSCA (Toxic Substances Control Act): 		
7732-18-5	Water	ACTIVE
7647-14-5	Sodium chloride	ACTIVE
7558-79-4	Sodium phosphate, Dibasic	ACTIVE
9048-46-8	Albumin, bovine	ACTIVE
7778-77-0	Potassium phosphate, Monobasic	ACTIVE
7447-40-7	Potassium chloride	ACTIVE
7646-85-7	Zinc chloride	ACTIVE
26172-55-4	Methylchloroisothiazolinone	ACTIVE
	Methylisothiazolinone	ACTIVE
<ul style="list-style-type: none"> · Hazardous Air Pollutants 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · Proposition 65 		
<ul style="list-style-type: none"> · Chemicals known to cause cancer: 		
None of the ingredients is listed.		
<ul style="list-style-type: none"> · Chemicals known to cause reproductive toxicity for females: 		
None of the ingredients is listed.		

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- **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

- **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

- **Carcinogenic categories**

- **EPA (Environmental Protection Agency)**

7646-85-7 | Zinc chloride

D, I, II

- **TLV (Threshold Limit Value)**

None of the ingredients is listed.

- **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- **Department issuing SDS:** Environment protection department.

- **Contact:** -

- **Date of preparation / last revision** 11/17/2023

- **Abbreviations and acronyms:**

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Specific Target Organ Toxicity - Repeated Exposure 2: Specific target organ toxicity (repeated exposure) – Category 2

- *** Data compared to the previous version altered.**