Section 1 - Product and Company Identification

1.1 Product identifiers

Product name: c-di-GMP, c-di-GMP VacciGrade™
Catalog code: tlrl-nacdg, tlrl-nacdg-5, vac-nacdg
CAS number: 61093-23-0

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

Identified use: Laboratory chemicals

Disclaimer: All InvivoGen products are supplied for research and laboratory use only. Not for drug, household or other uses.

1.3 Details of the supplier of the safety data sheet

InvivoGen US, 10515 Vista Sorrento Parkway
San Diego, California 92121, USA
(+1) 888 457 5873

InvivoGen Europe, 5 rue Jean Rodier
31400 Toulouse, France
+33 (0) 5 62 71 69 39

InvivoGen Asia, Unit 106, 1F,
15W Phase 3 Hong Kong Science Park,
Pak Shek Kok, Hong Kong
+852 3622 3480

1.4 Emergency telephone number:

ORFILA (INRS): +33 (0)1 45 42 59 59

Section 2 – Hazards Identification

2.1 Classification of substance according to Regulation (EC) No 1272/2008 [EU-GHS/CLP] and GHS
Skin irritation (Category 2), H315
Specific target organ toxicity - single exposure (Category 3), H335

2.2 Label elements according to Regulation (EC) No 1272/2008 [CLP] and GHS

Pictogram

Signal word Warning

Hazard statement
H315 Causes skin irritation.
H335 May cause respiratory irritation.

Precautionary statements
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302 + P352  IF ON SKIN: Wash with plenty of soap and water.
P304 + P341  IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312  Call a POISON CENTER or doctor/physician if you feel unwell.
P501  Dispose of contents/container to an approved waste disposal plant.

2.3 Other hazards - None

Section 3 – Composition/Information on Ingredient

3.1 Substances
Synonyms: Cyclic di-guanylate monophosphate, c-di-GMP sodium salt
Formula: C_{20}H_{22}N_{10}O_{14}P_{2} \cdot 2Na
Molecular weight: 734.38 g/mol
CAS number: 61093-23-0

Section 4 – First Aid Measures

4.1 Description of first aid measures
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled: If breathed in, remove to fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Wash skin with soap and plenty of water. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labeling (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 – Fire Fighting Measures

5.1 Extinguishing media
Suitable extinguishing media: Use water spray, carbon dioxide, dry chemical powder or appropriate foam.

5.2 Specific hazards arising from the chemical
No data available

5.3 Special Firefighting Procedures
Wear self-contained breathing apparatus for firefighting if necessary.

Section 6 – Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

Section 7 – Handling and Storage

7.1 Precautions for safe handling
Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature: -20 °C.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8 – Exposure Controls/PPE

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
Appropriate engineering controls
General industrial hygiene practice.

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.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.
Section 9 – Physical/Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance
Physical state: Solid
Color: White

Safety Data
Odor: No data available
Odor threshold: No data available
pH: No data available
Melting point/freezing point: No data available
Initial boiling point and boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability: No data available
Upper/lower flammability or explosive limits: No data available
Vapor pressure: No data available
Relative density: No data available
Solubility in water: 50 mg/ml
Partition coefficient (n-octanol/water): No data available
Autoignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available

9.2 Other safety information
no data available

Section 10 – Stability and Reactivity

10.1 Reactivity: No data available
10.2 Chemical stability: Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions: No data available
10.4 Conditions to avoid: No data available
10.5 Incompatible materials: No data available
10.6 Hazardous decomposition products: No data available
In case of fire: See section 5

Section 11 – Toxicological Information

11.1 Information on toxicological effects
Acute toxicity:
Oral LD50: No data available
Inhalation LC50: No data available
Dermal LD50: No data available
Other information on acute toxicity: No data available
Skin corrosion/irritation: No data available
Serious eye damage/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
Additional information: No data available
Section 12 – Ecological Information

12.1 Toxicity: No data available
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 or not conducted.
12.6 Other adverse effects: No data available

Section 13 – Disposal Considerations

13.1 Waste treatment methods
Product: Observe all federal, state and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Must not be disposed of together with household garbage.
Contaminated Packaging: Dispose of as unused product.

Section 14 – Transport Information

14.1 UN number
ADR/RID: - DOT (US): - IMDG: - IATA: -
14.2 UN proper shipping name
not dangerous goods
14.3 Transport hazard class(es)
ADR/RID: - DOT (US): - IMDG: - IATA: -
14.4 Packaging group
ADR/RID: - DOT (US): - IMDG: - IATA: -
14.5 Environmental hazards
ADR/RID: no DOT (US): no IMDG Marine pollutant: no IATA: no
14.6 Special precautions for user
no data available
14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
not applicable

Section 15 – Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
no data available
15.2 Chemical Safety Assessment
no data available

Section 16 – Other Information

The information contained in this SDS relates only to the material(s) designated and does not relate to use(s) in combination with any other material, process(es) and/or chemical reaction(s). InvivoGen provides this information in good faith and is based on our present knowledge. This SDS is provided without warranty of any kind. The recipient is responsible for ensuring that, where applicable, existing laws and guidelines are observed.