1. IDENTIFICATION OF SUBSTANCE/PREPARATION AND THE COMPANY UNDERTAKING

Chemical Name: Mercury(II) bis(dithizonate)
Product Code: FM25107
Synonyms: Bis(dithizonato)mercury
Mercury 2-phenylhydrazidato-bis[(phenylazo)thioformic acid
Mercuric bis(diphenylthiocarbazone)
Recommended uses: For R&D purposes
Supplier: Carbosynth Ltd, 8&9 Old Station Business Park, Compton,
Berkshire, RG20 6NE, UK.
Emergency contact numbers: Telephone: +44 (0)1635 578 444
Fax: +44 (0)1635 579 444
Mobile: +44 (0)7887 998 634

2. HAZARDS IDENTIFICATION

Very toxic by inhalation, in contact with skin and if swallowed. Very toxic to aquatic organisms,
may cause long-term adverse effects in the aquatic environment.

Classification:
According to Regulation (EC) No1272/2008
Acute toxicity, oral (Category 2)
Acute toxicity, dermal (Category 1)
Acute toxicity, inhalation (Category 2)
Specific target organ toxicity, repeated exposure (Category 2)
Hazardous to the aquatic environment, acute hazard (Category 1)
Hazardous to the aquatic environment, long-term hazard (Category 1)

Labelling and precautionary statements:
Pictogram:

Signal word: Danger.

Hazard statement(s):
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H330 Fatal if inhaled.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s):
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment.
MATERIAL SAFETY DATA SHEET

MERCURY(II) BIS(DITHIZONATE)

P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P361 Remove/Take off immediately all contaminated clothing.

Hazard symbol(s): T+ Very toxic.
N Dangerous for the environment.

R-phrase(s): R26/27/28 Very toxic by inhalation, in contact with skin and if swallowed.
R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s): S22 Do not breathe dust.
S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
S46 If swallowed, seek medical advice immediately and show this container or label
S61 Avoid release to the environment. Refer to special instructions/ Safety data sheets.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Molecular Formula: $C_{26}H_{22}HgN_{8}S_{2}$
Molecular weight: 711.23
CAS Number: 14783-59-6
EINECS Number: -

Synonyms: Bis(dithizonato)mercury
Mercury 2-phenylhydrazidotris[(phenylazo)thioformic acid
Mercuric bis(diphenylthiocarbazone)

4. FIRST AID MEASURES

Eye contact: Immediately flush eye with copious amounts of water for at least 15 minutes. Get medical aid immediately.

Skin contact: In case of contact remove contaminated clothing and immediately wash affected areas with copious quantities of water and soap for at least 15 minutes. Get medical aid immediately. Wash contaminated clothing before reuse.

Inhalation: Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult give oxygen. Get medical aid.

Ingestion: Do NOT induce vomiting unless advised to do so by a physician or Poison Control Center. Never give anything by mouth to an unconscious person. Wash out mouth with water provided person is conscious. Call a physician.

Notes to Physician: Treat symptomatically and supportively.
5. FIRE-FIGHTING MEASURES

Personal precautions: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing media: In case of fire use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam.

Special hazards arising from the substance or mixture: Carbon oxides, nitrogen oxides, mercury oxides, sulphur oxides.

6. ACCIDENTAL RELEASE MEASURES

General Information: Use proper personal protective equipment as indicated in Section 8.

Personal precautions: Wear self-contained breathing apparatus, eye protection and gloves. Keep personal hygiene. Avoid contact with skin and eyes. Prevent the formation of dusts and mists. Avoid breathing dust, vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions: Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Discharge into the environment must be avoided.

Spills/Leaks: Vacuum or sweep up using non-combustible absorbent material (such as clay, vermiculite, diatomaceous earth or other appropriate material), then place the material in appropriate container for disposal and dispose of as hazardous waste. Ventilate area, clean up spills and wash spill site after material pickup is complete, observing precautions in the Protective Equipment section.

7. HANDLING AND STORAGE

Handling: Wear appropriate protective clothing - see Section 8. Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. No smoking, eating or drinking around this material.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational exposure:
USA: TWA: 0.1 mg/m$^3$ ACGIH Threshold Limit Values (TLV)
       0.05 mg/m$^3$ NIOSH Recommended Exposure Limits
USA:  C: 0.1 mg/m$^3$ NIOSH Recommended Exposure Limits

Personal protection equipment:
Eye protection: Wear appropriate protective eyeglasses with side-shields conforming to EN 166, chemical safety goggles or face-shield (min. 8-inch) as described by OSHA’s eye and face protection regulations. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).
Skin protection: Wear appropriate protective gloves to prevent skin exposure, as defined in EU Directive 89/686/EEC and the standard EN 374 derived from it.
Body protection: Appropriate protective clothing, overalls.
Respiratory protection: Where risk assessment indicates air-purifying respirators are required use a dust mask type N100 (US) or type P3 (EN 143) particle respirators. These are to be only used as a backup to local exhaust ventilation or other engineering controls. If the respirator is the only means of protection, a full-face supplied air respirator must be used. Respirators and components must tested and approved under appropriate government standards - NIOSH (US) or CEN (EU).
Hygiene measures: Use good working practices. Wash hands and face thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Dark red solid.</td>
</tr>
<tr>
<td>Odour</td>
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</tr>
<tr>
<td>Odour threshold</td>
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</tr>
<tr>
<td>pH</td>
<td>Data not available/does not apply.</td>
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<td>Boiling point</td>
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<td>Flash point</td>
<td>Data not available/does not apply.</td>
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<tr>
<td>Evaporation rate</td>
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<tr>
<td>Flammability</td>
<td>Data not available/does not apply.</td>
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<tr>
<td>Flammability or explosive limits</td>
<td>Data not available/does not apply.</td>
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<tr>
<td>Vapor pressure</td>
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<tr>
<td>Vapor density</td>
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<tr>
<td>Relative density</td>
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<tr>
<td>Solubility</td>
<td>Chloroform.</td>
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<tr>
<td>Partition coefficient: n-octanol/water</td>
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</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Data not available/does not apply.</td>
</tr>
</tbody>
</table>
10. STABILITY AND REACTIVITY

Chemical stability: Stable under recommended storage conditions.
Conditions to avoid: Data not available.
Incompatibilities with other materials: Strong oxidizing agents.
Hazardous decomposition products: Carbon oxides, nitrogen oxides, mercury oxides, sulphur oxides.
Hazardous polymerization: Data not available.

11. TOXICOLOGICAL INFORMATION

RTCS #: Data not available.
Acute toxicity: Data not available.
Skin corrosion/irritation: Data not available.
Serious eye damage/eye irritation: Data not available.
Respiratory or skin sensitization: Data not available.
Germ cell mutagenicity: Data not available.
Reproductive toxicity: Data not available.
Carcinogenicity: Data not available.

Specific target organ toxicity - single exposure: Data not available.
Specific target organ toxicity - repeated exposure: Data not available.
Aspiration hazard: Data not available.

Signs and symptoms of exposure: To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

Potential health effects:
Eye: May cause eye irritation.
Skin: May be fatal by skin absorption.
Ingestion: May be fatal if swallowed.
Inhalation: May be fatal if inhaled.
Chronic: May cause respiratory tract irritation.

Decomposition temperature: Data not available/does not apply.
Viscosity: Data not available/does not apply.
12. ECOLOGICAL INFORMATION

Data not available.

13. DISPOSAL CONSIDERATIONS

Observe all federal, state and local environmental regulations. Product may be burned in an incinerator equipped with an afterburner and scrubber. Excess and expired materials are to be offered to a licensed hazardous material disposal company. Product is not to be disposed of in sanitary sewers, storm sewers, or landfills.

14. TRANSPORT INFORMATION

This product is classified as hazardous for transport.

**RID/ADR**
Proper Shipping Name: MERCURY COMPOUND, SOLID, N.O.S. (Mercury(II) bis(dithizonate))
UN Number: 2025
Class: 6.1
Packing Group: II
Environmental Hazards: No.

**IMDG**
Proper Shipping Name: MERCURY COMPOUND, SOLID, N.O.S. (Mercury(II) bis(dithizonate))
UN Number: 2025
Class: 6.1
Packing Group: II
Marine Pollutant: Yes.

**IATA**
Proper Shipping Name: MERCURY COMPOUND, SOLID, N.O.S. (Mercury(II) bis(dithizonate))
UN Number: 2025
Class: 6.1
Packing Group: II
Environmental Hazards: No.

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

16. ADDITIONAL INFORMATION
Further information on PPE:

European Standard & performance category markings:

- **EN143**: Particulates filter.
- **EN166**: Standard for eye protection.
- **EN374**: Protects hands against chemicals and/or microorganisms.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.