Imidocarb Injection Formulation

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Imidocarb Injection Formulation

Manufacturer or supplier’s details
Company : MSD
Address : No. 485 Jing Tai Road
Pu Tuo District - Shanghai - China 200331

Telephone : +1-908-740-4000
Emergency telephone number : 86-571-87268110
E-mail address : EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product

2. HAZARDS IDENTIFICATION

Emergency Overview

| Appearance | liquid |
| Colour | clear |
| Odour | No data available |

Suspected of damaging the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.

GHS Classification

Reproductive toxicity : Category 2
Specific target organ toxicity - single exposure : Category 1
Specific target organ toxicity - repeated exposure : Category 1

GHS label elements

Signal word : Danger
Hazard statements : H361d Suspected of damaging the unborn child.
H370 Causes damage to organs.
H372 Causes damage to organs through prolonged or repeated exposure.
Imidocarb Injection Formulation

Precautionary statements:

**Prevention:**
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 vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**
P308 + P311 IF exposed or concerned: Call a POISON CENTER/ doctor.

**Storage:**
P405 Store locked up.

**Disposal:**
P501 Dispose of contents/ container to an approved waste disposal plant.

Physical and chemical hazards
Not classified based on available information.

Health hazards
Suspected of damaging the unborn child. Causes damage to organs. Causes damage to organs through prolonged or repeated exposure.

Environmental hazards
Not classified based on available information.

Other hazards which do not result in classification
None known.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Components**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>imidocarb</td>
<td>27885-92-3</td>
<td>&gt;= 10 -&lt; 20</td>
</tr>
<tr>
<td>Propionic acid</td>
<td>79-09-4</td>
<td>&gt;= 3 -&lt; 5</td>
</tr>
</tbody>
</table>

### 4. FIRST AID MEASURES

**General advice**
In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

**If inhaled**
If inhaled, remove to fresh air.
Get medical attention.

**In case of skin contact**
In case of contact, immediately flush skin with soap and plenty of water.
Imidocarb Injection Formulation

5. FIREFIGHTING MEASURES

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media: None known.

Specific hazards during firefighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions: Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
Prevent spreading over a wide area (e.g. by containment or oil barriers).
Retain and dispose of contaminated wash water.
Local authorities should be advised if significant spillages
cannot be contained.

Methods and materials for containment and cleaning up:
- Soak up with inert absorbent material.
- For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked material can be pumped, store recovered material in appropriate container.
- Clean up remaining materials from spill with suitable absorbent.
- Local or national regulations may apply to releases and disposal of this material, as well as those materials and items employed in the cleanup of releases. You will need to determine which regulations are applicable.
- Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

7. HANDLING AND STORAGE

Handling
Technical measures:
- See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation:
- Use only with adequate ventilation.

Advice on safe handling:
- Do not break the mist or vapours.
- Do not swallow.
- Avoid contact with eyes.
- Avoid prolonged or repeated contact with skin.
- Wash skin thoroughly after handling.
- Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
- Do not eat, drink or smoke when using this product.
- Take care to prevent spills, waste and minimize release to the environment.

Avoidance of contact:
- Oxidizing agents

Storage
Conditions for safe storage:
- Keep in properly labelled containers.
- Store locked up.
- Store in accordance with the particular national regulations.

Materials to avoid:
- Do not store with the following product types:
  - Strong oxidizing agents

Packaging material:
- Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>imidocarb</td>
<td>27885-92-3</td>
<td>TWA</td>
<td>40 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>400 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td>Propionic acid</td>
<td>79-09-4</td>
<td>PC-TWA</td>
<td>30 mg/m³</td>
<td>CN OEL</td>
</tr>
</tbody>
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Imidocarb Injection Formulation

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<td>2020/10/10</td>
<td>632243-00011</td>
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<td>2016/05/02</td>
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<tr>
<th>TWA</th>
<th>10 ppm</th>
<th>ACGIH</th>
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**Engineering measures**: Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less quick connections). All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices). Minimize open handling.

**Personal protective equipment**

**Respiratory protection**: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

**Filter type**: Combined particulates and organic vapour type

**Eye/face protection**: Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

**Skin and body protection**: Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing.

**Hand protection**

**Material**: Chemical-resistant gloves

**Remarks**: Consider double gloving.

**Hygiene measures**: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**: liquid

**Colour**: clear

**Odour**: No data available
## Odour Threshold
No data available

## pH
4.5

## Melting point/freezing point
100 °C

## Initial boiling point and boiling range
No data available

## Flash point
No data available

## Evaporation rate
No data available

## Flammability (solid, gas)
Not applicable

## Flammability (liquids)
No data available

## Upper explosion limit / Upper flammability limit
No data available

## Lower explosion limit / Lower flammability limit
No data available

## Vapour pressure
No data available

## Relative vapour density
No data available

## Density
No data available

## Solubility(ies)
Water solubility: soluble

## Partition coefficient: n-octanol/water
No data available

## Auto-ignition temperature
No data available

## Decomposition temperature
No data available

## Viscosity
Viscosity, kinematic: No data available

## Explosive properties
Not explosive

## Oxidizing properties
The substance or mixture is not classified as oxidizing.

## Molecular weight
No data available

## Particle size
No data available

### 10. STABILITY AND REACTIVITY
Imidocarb Injection Formulation

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Can react with strong oxidizing agents.
Conditions to avoid : None known.
Incompatible materials : Oxidizing agents
Hazardous decomposition products : No hazardous decomposition products are known.

11. TOXICOLOGICAL INFORMATION

Exposure routes :
- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity
Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Components:

imidocarb:
Acute oral toxicity : LD50 (Rat): 1,216 - 1,652 mg/kg
LD50 (Mouse): 544 - 702 mg/kg
LD50 (Rabbit): 317 mg/kg

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Acute toxicity (other routes of administration) : LD50 (Rat): 32.7 mg/kg
Application Route: Intravenous
LD50 (Mouse): 22.3 mg/kg
Application Route: Intravenous

Propionic acid:
Acute oral toxicity : LD50 (Rat): 3,455.1 mg/kg

Acute dermal toxicity : LD50 (Rat): 3,235 mg/kg

Skin corrosion/irritation
Not classified based on available information.
Imidocarb Injection Formulation

Components:

imidocarb:
Remarks : No data available

Propionic acid:
Species : Rabbit
Result : Corrosive after 3 minutes to 1 hour of exposure

Serious eye damage/eye irritation
Not classified based on available information.

Components:

imidocarb:
Remarks : No data available

Propionic acid:
Species : Rabbit
Result : Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Components:

imidocarb:
Remarks : No data available

Propionic acid:
Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Result : negative
Remarks : Based on data from similar materials

Germ cell mutagenicity
Not classified based on available information.

Components:

imidocarb:
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Imidocarb Injection Formulation

Result: negative
Test Type: Chromosome aberration test in vitro
Result: equivocal

Genotoxicity in vivo:
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Oral
Result: negative

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Oral
Result: negative

Propionic acid:
Genotoxicity in vitro:
Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo:
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Chinese hamster
Application Route: Intraperitoneal injection
Result: negative

Carcinogenicity
Not classified based on available information.

Components:

imidocarb:
Species: Rat
Application Route: Oral
Exposure time: 104 weeks
LOAEL: 240 mg/kg body weight
Result: negative
Target Organs: Mammary gland
Remarks: The mechanism or mode of action may not be relevant in humans.

Propionic acid:
Species: Rat
Application Route: Ingestion
Exposure time: 2 Years
Result: negative

Reproductive toxicity
Suspected of damaging the unborn child.
Imidocarb Injection Formulation

**Components:**

imidocarb:

Effects on fertility:
- Test Type: Two-generation reproduction toxicity study
  - Species: Rat
  - Application Route: Oral
  - Fertility: LOAEL: 135 mg/kg body weight
  - Result: Adverse neonatal effects.

- Test Type: Two-generation reproduction toxicity study
  - Species: Rat
  - Application Route: Oral
  - Fertility: NOAEL: 45 mg/kg body weight

Effects on foetal development:
- Test Type: Embryo-foetal development
  - Species: Rat
  - Application Route: Oral
  - Developmental Toxicity: LOAEL: 76 mg/kg body weight
  - Result: Effects on foetal development, No teratogenic effects

- Test Type: Embryo-foetal development
  - Species: Rat
  - Application Route: Oral
  - Developmental Toxicity: NOAEL: 19 mg/kg body weight

- Test Type: Embryo-foetal development
  - Species: Rabbit
  - Application Route: Oral
  - Developmental Toxicity: NOAEL: 20 mg/kg body weight
  - Result: No effects on foetal development

Reproductive toxicity - Assessment:
- Some evidence of adverse effects on development, based on animal experiments.

Propionic acid:

Effects on foetal development:
- Test Type: Embryo-foetal development
  - Species: Rat
  - Application Route: Ingestion
  - Result: negative
  - Remarks: Based on data from similar materials

**STOT - single exposure**
Causes damage to organs.

**Components:**

imidocarb:

Target Organs:
- Central nervous system

Assessment:
- Causes damage to organs.

Propionic acid:

Assessment:
- May cause respiratory irritation.
SAFETY DATA SHEET
according to GB/T 16483 and GB/T 17519

Imidocarb Injection Formulation

Version 3.8  Revision Date: 2020/10/10  SDS Number: 632243-00011  Date of last issue: 2020/04/28  Date of first issue: 2016/05/02

STOT - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Components:
imidocarb:
Target Organs: Liver, Kidney
Assessment: Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:
imidocarb:
Species: Rat
LOAEL: 125 mg/kg
Application Route: Oral
Exposure time: 90 Days
Target Organs: Liver

Species: Rat
NOAEL: 76 mg/kg
LOAEL: 415 mg/kg
Application Route: Oral
Exposure time: 90 Days
Target Organs: Liver

Species: Dog
NOAEL: 5 mg/kg
LOAEL: 5 mg/kg
Application Route: Oral
Exposure time: 90 Days
Target Organs: Liver, Kidney
Symptoms: muscle twitching, Salivation, recumbency, ataxia, splayed legs

Species: Rat
NOAEL: 15 mg/kg
LOAEL: 60 mg/kg
Application Route: Oral
Exposure time: 104 Weeks
Target Organs: Liver, Kidney, Blood

Species: Monkey
NOAEL: 5 mg/kg
Application Route: Oral
Exposure time: 30 Days
Remarks: No significant adverse effects were reported

Propionic acid:
Species: Rat
NOAEL: 50000 ppm
Application Route: Ingestion
Imidocarb Injection Formulation

**Exposure time**: 90 Days

**Aspiration toxicity**
Not classified based on available information.

**Experience with human exposure**

**Components:**

**imidocarb:**

**Inhalation**

- Target Organs: Central nervous system
- Symptoms: Salivation, muscle twitching, Tremors, Lachrymation, ataxia, lethargy
- Remarks: Based on Animal Evidence

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**Propionic acid:**

- **Toxicity to fish**
  - LC50 (Lepomis macrochirus (Bluegill sunfish)): 85.3 mg/l
  - Exposure time: 96 h

- **Toxicity to daphnia and other aquatic invertebrates**
  - EC50 (Daphnia magna (Water flea)): 22.7 mg/l
  - Exposure time: 48 h

- **Toxicity to algae/aquatic plants**
  - EC50 (Desmodesmus subspicatus (green algae)): 48.7 mg/l
  - Exposure time: 72 h

**Persistence and degradability**

**Components:**

**Propionic acid:**

- **Biodegradability**
  - Result: Readily biodegradable.
  - Biodegradation: 93 %
  - Exposure time: 20 d

**Bioaccumulative potential**

**Components:**

**imidocarb:**

- Partition coefficient: n-octanol/water: log Pow: 3.88

**Propionic acid:**

- Partition coefficient: n-octanol/water: log Pow: 0.33

**Mobility in soil**
No data available
13. DISPOSAL CONSIDERATIONS

Disposal methods
- Waste from residues: Dispose of in accordance with local regulations.
- Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal. If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION

International Regulations
- **UNRTDG**: Not regulated as a dangerous good
- **IATA-DGR**: Not regulated as a dangerous good
- **IMDG-Code**: Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

National Regulations
- **GB 6944/12268**: Not regulated as a dangerous good

Special precautions for user
Not applicable

15. REGULATORY INFORMATION

National regulatory information
- Law on the Prevention and Control of Occupational Diseases

The components of this product are reported in the following inventories:
- **AICS**: not determined
- **DSL**: not determined
- **IECSC**: not determined

16. OTHER INFORMATION

Further information
- Sources of key data used to: Internal technical data, data from raw material SDSs, OECD
Imidocarb Injection Formulation

**Version**: 3.8  
**Revision Date**: 2020/10/10  
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**Date format**: yyyy/mm/dd

**Full text of other abbreviations**

- ACGIH: USA. ACGIH Threshold Limit Values (TLV)
- CN OEL: Occupational exposure limits for hazardous agents in the workplace - Chemical hazardous agents.
- ACGIH / TWA: 8-hour, time-weighted average
- CN OEL / PC-TWA: Permissible concentration - time weighted average

**Disclaimer**

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 is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user's end product, if applicable.
SAFETY DATA SHEET
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CN / EN