

## SAFETY DATA SHEET

Version 6.3  
Revision Date 01/15/2020  
Print Date 05/30/2020**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**Product name : Isopropyl  $\beta$ -D-1-thiogalactopyranosideProduct Number : I5502  
Brand : Sigma-Aldrich  
CAS-No. : 367-93-1**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**Company : Sigma-Aldrich Inc.  
3050 Spruce Street  
ST. LOUIS MO 63103  
UNITED STATESTelephone : +1 314 771-5765  
Fax : +1 800 325-5052**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**Eye irritation (Category 2A), H319  
Carcinogenicity (Category 2), H351

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word : Warning

Hazard statement(s)  
H319 : Causes serious eye irritation.  
H351 : Suspected of causing cancer.Precautionary statement(s)  
P201 : Obtain special instructions before use.

|                    |  |
|--------------------|--|
| P202               | Do not handle until all safety precautions have been read and understood.  |
| P264               | Wash skin thoroughly after handling.   |
| P280               | Wear protective gloves/ protective clothing/ eye protection/ face protection.  |
| P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| P308 + P313        | IF exposed or concerned: Get medical advice/ attention.  |
| P337 + P313        | If eye irritation persists: Get medical advice/ attention.   |
| P405               | Store locked up.   |
| P501               | Dispose of contents/ container to an approved waste disposal plant.  |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |   |
|------------------|---|
| Synonyms         | : IPTG<br>Isopropyl $\beta$ -D-thiogalactoside    |
| Formula          | : C <sub>9</sub> H <sub>18</sub> O <sub>5</sub> S |
| Molecular weight | : 238.3 g/mol                                     |
| CAS-No.          | : 367-93-1  |
| EC-No.           | : 206-703-0                                       |

| Component          | Classification   | Concentration     |
|--------------------|--|-------------------|
| <b>1,4-Dioxane</b> | Flam. Liq. 2; Eye Irrit. 2A;<br>Carc. 2; STOT SE 3; H225,<br>H319, H351, H335<br>Concentration limits:<br>>= 20 %: STOT SE 3,<br>H335; | >= 10 - < 20<br>% |

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## 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, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off 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**

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 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

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**SECTION 5: Firefighting measures****5.1 Extinguishing media****Suitable extinguishing media**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides, Sulphur oxides

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

No data available

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**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

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**

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

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**SECTION 7: Handling and storage****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

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 2 - 8 °C

Keep in a dry place.

Storage class (TRGS 510): 11: Combustible Solids

## 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/personal protection

### 8.1 Control parameters

#### Components with workplace control parameters

| Component   | CAS-No.  | Value  | Control parameters               | Basis   |
|-------------|----------|--|----------------------------------|---|
| 1,4-Dioxane | 123-91-1 | TWA  | 20 ppm                           | USA. ACGIH Threshold Limit Values (TLV)   |
|             | Remarks  | Liver damage<br>Confirmed animal carcinogen with unknown relevance to humans<br>Danger of cutaneous absorption |                                  |   |
|             |          | TWA  | 25 ppm<br>90 mg/m <sup>3</sup>   | USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000                           |
|             |          | Skin notation  |                                  |   |
|             |          | TWA  | 100 ppm<br>360 mg/m <sup>3</sup> | USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants        |
|             |          | Skin designation<br>The value in mg/m <sup>3</sup> is approximate.   |                                  |   |
|             |          | C  | 1 ppm<br>3.6 mg/m <sup>3</sup>   | USA. NIOSH Recommended Exposure Limits  |
|             |          | Potential Occupational Carcinogen<br>See Appendix A<br>30 minute ceiling value                                 |                                  |   |
|             |          | PEL  | 0.28 ppm<br>1 mg/m <sup>3</sup>  | California permissible exposure limits for chemical contaminants (Title 8, Article 107) |
|             |          | Skin   |                                  |   |

### 8.2 Exposure controls

#### Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

## Personal protective equipment

### Eye/face protection

Safety glasses with side-shields conforming to EN166 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                    |                                      |
|--------------------|--------------------------------------|
| a) Appearance      | Form: powder<br>Colour: light yellow |
| b) Odour           | No data available                    |
| c) Odour Threshold | No data available                    |

|   |                             |
|---|-----------------------------|
| d) pH   | No data available           |
| e) Melting point/freezing point                 | 120 - 122 °C (248 - 252 °F) |
| f) Initial boiling point and boiling range      | No data available           |
| g) Flash point                                  | ( )No data available        |
| h) Evaporation rate                             | No data available           |
| i) Flammability (solid, gas)                    | No data available           |
| j) Upper/lower flammability or explosive limits | No data available           |
| k) Vapour pressure                              | No data available           |
| l) Vapour density                               | No data available           |
| m) Relative density                             | No data available           |
| n) Water solubility                             | No data available           |
| o) Partition coefficient: n-octanol/water       | No data available           |
| p) Auto-ignition temperature                    | No data available           |
| q) Decomposition temperature                    | No data available           |
| r) Viscosity                                    | No data available           |
| s) Explosive properties                         | No data available           |
| t) Oxidizing properties                         | No data available           |

## 9.2 Other safety information

No data available

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## 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

Oxygen, Oxidizing agents, Halogens, Reducing agents, Perchlorates., Trimethylaluminum

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides

Other decomposition products - No data available  
In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### **Acute toxicity**

No data available

No data available

Inhalation: No data available

Inhalation: No data available

Dermal: No data available

Dermal: No data available

No data available

No data available

#### **Skin corrosion/irritation**

No data available

No data available

#### **Serious eye damage/eye irritation**

No data available

No data available

#### **Respiratory or skin sensitisation**

No data available

No data available

#### **Germ cell mutagenicity**

No data available

No data available

#### **Carcinogenicity**

IARC: 2B - Group 2B: Possibly carcinogenic to humans (1,4-Dioxane)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **Reproductive toxicity**

No data available

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

#### **Additional Information**

RTECS: Not available

Nausea, Vomiting, Weakness, Dizziness, Vertigo, Headache, Sweating, loss of appetite, Kidney injury may occur., Liver injury may occur., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. (Isopropyl- $\beta$ -D-thiogalactopyranoside)

Liver - Irregularities - Based on Human Evidence

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## **SECTION 12: Ecological information**

### **12.1 Toxicity**

No data available  
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/not conducted

### **12.6 Other adverse effects**

No data available  
No data available

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## **SECTION 13: Disposal considerations**

### **13.1 Waste treatment methods**

#### **Product**

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### **Contaminated packaging**

Dispose of as unused product.

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## **SECTION 14: Transport information**

### **DOT (US)**

Not dangerous goods

### **IMDG**

Not dangerous goods



**IATA**

Not dangerous goods

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**SECTION 15: Regulatory information****SARA 302 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

|             | CAS-No.  | Revision Date |
|-------------|----------|---------------|
| 1,4-Dioxane | 123-91-1 | 2007-03-01    |

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

|   | CAS-No.  | Revision Date |
|---|----------|---------------|
| Isopropyl- $\beta$ -D-thiogalactopyranoside | 367-93-1 |               |
| 1,4-Dioxane                                 | 123-91-1 | 2007-03-01    |

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**SECTION 16: Other information****Further information**

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