

46-06

PAGE: 1

DATE: 03/29/06 ACCT: 888235001
 INDEX: D60872612 CAT NO: BP16201 PO NBR: CROSSGROVE-FACDEV

Material Safety Data Sheet
 Isopropyl-beta-d-thiogalactopyranoside, 99+% cont. ca 15% 1,4-dioxan (0.5 mole)
 61057

Section 1 - Chemical Product and Company Identification

MSDS Name:
 Isopropyl-beta-d-thiogalactopyranoside, 99+% cont. ca 15% 1,4-dioxan
 (0.5 mole)

Catalog Numbers:
 BP1620-1, BP1620-10, BP16217

Synonyms:
 beta-D-Galactopyranoside; IPTG; Isopropyl beta-Thiogalactopyranoside.

Company Identification:
 Fisher Scientific One Reagent Lane
 Fair Lawn, NJ 07410

For information in the US, call:
 201-796-7100
 Emergency Number US:201-796-7100
 CHEMTREC Phone Number, US:
 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#: 123-91-1
 Chemical Name: 1,4-Dioxane
 %: 14-17%
 EINECS#: 204-661-8
 Hazard Symbols: F XN
 Risk Phrases:

CAS#: 367-93-1
 Chemical Name: Isopropyl-beta-d-thiogalactopyranoside
 %: 83-86
 EINECS#: 206-703-0
 Hazard Symbols:
 Risk Phrases:

Text for R-phrases: see Section 16
 Hazard Symbols:
 XN
 Risk Phrases:
 19 40

Section 3 - Hazards Identification
 EMERGENCY OVERVIEW

Caution! The toxicological properties of this material have not been fully investigated. May form explosive peroxides. May cause eye and skin irritation. May cause respiratory and digestive tract irritation. May cause cancer based on animal studies.
 Target Organs: None.
 Potential Health Effects

Eye:
 May cause eye irritation. Contact may cause transient eye irritation.

Skin:
 May cause skin irritation.

Ingestion:
 May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated.

Inhalation:
 May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated.

Chronic:
 May cause cancer according to animal studies.

Eyes:
 Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin:
 Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion:
 Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation:
 Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Notes to Physician:

Section 4 - First Aid Measures

Section 5 - Fire Fighting Measures

General Information:
 As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Combustion generates toxic fumes. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

4,659

PAGE: 2

DATE: 03/29/06 ACCT: 888235001
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Use water spray, dry chemical, carbon dioxide, or appropriate foam.
 Autoignition Temperature: Not applicable.
 Flash Point: > 110 deg C (> 230.00 deg F)
 Explosion Limits: Lower: N/A
 Explosion Limits: Upper: N/A
 NFPA Rating:
 health: 1; flammability: 0; instability: 0;
 Section 6 - Accidental Release Measures

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

Spills/Leaks:
 Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation.
 Section 7 - Handling and Storage

Handling:
 Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Storage:
 Deep freeze (below -20°C). Keep containers tightly closed.
 Section 8 - Exposure Controls, Personal Protection

Engineering Controls:
 Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
1,4-Dioxane	20 ppm; Skin - potential significant contribution to overall exposure by the cutaneous route	500 ppm IDLH	100 ppm TWA; 360 mg/m3 TWA
Isopropyl-beta-d-thiogalactopyranoside	none listed	none listed	none listed

OSHA Vacated PELs:
 1,4-Dioxane:
 25 ppm TWA; 90 mg/m3 TWA
 Isopropyl-beta-d-thiogalactopyranoside:
 None listed

Personal Protective Equipment

Eyes:
 Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:
 Wear appropriate gloves to prevent skin exposure.

Clothing:
 Wear appropriate protective clothing to minimize contact with skin.

Respirators:
 Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid
 Color: white
 Odor: none reported
 pH: Not available
 Vapor Pressure: Not available
 Vapor Density: Not available
 Evaporation Rate: Not available
 Viscosity: Not available
 Boiling Point: Not available
 Freezing/Melting Point: 122 - 124 deg C
 Decomposition Temperature: Not available
 Solubility in water: soluble in water
 Specific Gravity/Density:
 Molecular Formula: C9H18O5S
 Molecular Weight: 238.30

Section 10 - Stability and Reactivity

Chemical Stability:
 Stable under normal temperatures and pressures. May form explosive peroxides. Under normal storage conditions, peroxidizable compounds can form and accumulate peroxides which may explode when subjected to heat or shock. This material is most hazardous when peroxide levels are concentrated by distillation or evaporation.

Conditions to Avoid:

4,660

DATE: 03/29/06 ACCT: 888235001
 INDEXT: D60872612 CAT NO: BF16201 PO NBR: CROSSGROVE-FACDEV

High temperatures, incompatible materials, dust generation.
 Incompatibilities with Other Materials
 Strong oxidizing agents.
 Hazardous Decomposition Products
 Carbon monoxide, oxides of sulfur, carbon dioxide.
 Hazardous Polymerization
 Has not been reported.

Section 11 - Toxicological Information

RTECS#:
 CAS# 123-91-1: JG8225000
 CAS# 367-93-1: None listed
 LD50/LC50:
 RTECS: CAS# 123-91-1: Draize test, rabbit, eye: 100 mg
 Severe; Draize test, rabbit, eye: 100 mg/24H Moderate;
 Inhalation, mouse: LC50 = 37 gm/m3/2H; Inhalation, rat: LC50 =
 48 gm/m3/2H; Oral, mouse: LD50 = 5300 mg/kg; Oral, rabbit:
 LD50 = 2 gm/kg; Oral, rat: LD50 = 4200 mg/kg; Skin, rabbit:
 LD50 = 7600 uL/kg;
 RTECS: CAS# 367-93-1:
 Carcinogenicity:
 1,4-Dioxane -
 ACGIH: A3 - Confirmed animal carcinogen with unknown relevance to humans
 California: carcinogen, initial date 1/1/88
 NTP: suspect carcinogen
 IARC: Group 2B carcinogen
 Isopropyl-beta-d-thiogalactopyranoside -
 Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:
 Not available
 Teratogenicity:
 Not available
 Reproductive:
 Not available
 Neurotoxicity:
 Not available
 Mutagenicity:
 Not available
 Other:

The toxicological properties have not been fully investigated.
 Section 12 - Ecological Information

Other:
 No information available.
 Section 13 - Disposal Considerations
 Chemical waste generators must determine whether a discarded chemical
 is classified as a hazardous waste.
 US EPA guidelines for the classification determination are listed in
 40 CFR Parts 261.3. Additionally, waste generators must consult state
 and local hazardous waste regulations to ensure complete and accurate
 classification.
 RCRA P-Series: None listed.
 RCRA U-Series: CAS# 123-91-1: waste number U108.

Section 14 - Transport Information

US DOT
 Shipping Name: Please contact Fisher Scientific for shipping info
 Hazard Class:
 UN Number:
 Packing Group:

Canada TDG
 Shipping Name: Not available
 Hazard Class:
 UN Number:
 Packing Group:

USA RQ: CAS# 123-91-1: 100 lb final RQ: 45.4 kg final RQ
 Section 15 - Regulatory Information

US Federal
 TSCA
 CAS# 123-91-1 is listed on the TSCA Inventory.
 CAS# 367-93-1 is listed on the TSCA Inventory.
 Health & Safety Reporting List
 None of the chemicals are on the Health & Safety Reporting List.
 Chemical Test Rules
 None of the chemicals in this product are under a Chemical Test Rule.
 Section 12b
 None of the chemicals are listed under TSCA Section 12b.
 TSCA Significant New Use Rule
 None of the chemicals in this material have a SNUR under TSCA.
 CERCLA Hazardous Substances and corresponding RQs
 CAS# 123-91-1: 100 lb final RQ: 45.4 kg final RQ
 SARA Section 302 Extremely Hazardous Substances
 None of the chemicals in this product have a TPQ.
 SARA Codes
 CAS # 123-91-1: chronic, flammable.
 Section 313
 This material contains 1,4-Dioxane (CAS# 123-91-1, 14 17%), which is
 subject to the reporting requirements of Section 313 of SARA Title
 III and 40 CFR Part 372.
 Clean Air Act:
 CAS# 123-91-1 is listed as a hazardous air pollutant (HAP).
 This material does not contain any Class 1 Ozone depletors.

4,661

DATE: 03/29/06 ACCT: 888235001
 INDEXT: D60872612 CAT NO: BF16201 PO NBR: CROSSGROVE-FACDEV

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
 None of the chemicals in this product are listed as Hazardous
 Substances under the CWA.
 None of the chemicals in this product are listed as Priority
 Pollutants under the CWA.
 None of the chemicals in this product are listed as Toxic Pollutants
 under the CWA.
 OSHA:

STATE

1,4-Dioxane can be found on the following state right to know lists:
 California, New Jersey, Pennsylvania, Minnesota, Massachusetts.
 Isopropyl-beta-d-thiogalactopyranoside is not present on state lists
 from CA, PA, MN, MA, FL, or NJ.

California Prop 65

The following statement(s) is(are) made in order to comply with
 the California Safe Drinking Water Act:
 WARNING: This product contains 1,4-Dioxane, a chemical known to the
 state of California to cause cancer.
 California No Significant Risk Level:
 CAS# 123-91-1: 30 Sg/day NSRL
 European/International Regulations
 European Labeling in Accordance with EC Directives
 Hazard Symbols: XN
 Risk Phrases:

R 19 May form explosive peroxides.
 R 40 Limited evidence of a carcinogenic effect.

Safety Phrases:

S 36/37 Wear suitable protective clothing and
 gloves.
 S 45 In case of accident or if you feel unwell, seek
 medical advice immediately (show the label where
 possible).

WGK (Water Danger/Protection)

CAS# 123-91-1: 2
 CAS# 367-93-1: Not available

Canada

CAS# 123-91-1 is listed on Canada's DSL List
 CAS# 367-93-1 is listed on Canada's DSL List
 Canadian WHMIS Classifications: D2A
 This product has been classified in accordance with the hazard
 criteria of the Controlled Products Regulations and the MSDS
 contains all of the information required by those regulations.
 CAS# 123-91-1 is listed on Canada's Ingredient Disclosure
 List
 CAS# 367-93-1 is not listed on Canada's Ingredient Disclosure
 List.

Section 16 - Other Information

MSDS Creation Date:

11/12/1998
 Revision #6 Date
 3/03/2005

The information above is believed to be accurate and represents the
 best information currently available to us. However, we make no
 warranty of merchantability or any other warranty, express or
 implied, with respect to such information, and we assume no liability
 resulting from its use. Users should make their own investigations to
 determine the suitability of the information for their particular
 purposes. In no event shall the company be liable for any claims,
 losses, or damages of any third party or for lost profits or any
 special, indirect, incidental, consequential, or exemplary damages
 howsoever arising, even if the company has been advised of the
 possibility of such damages.