ZYMO RESEARCH

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Material Safety Data Sheet

Zymo Research advises each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: (1) notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; (2) furnish this same information to each of its customers for the product; and (3) request its customers to notify their employees, customers, and other users of the product of this information.

Section 1 – Product and Company Information

Reagent/Buffer Name: IPTG (Isopropyl-beta-D-thiogalactopyranoside)
Catalog Number: I1001-5, I1001-25

Company: Zymo Research Corp.
Street Address: 625 W. Katella Ave, Suite 30
City, State, Zip Code, Country: Orange, CA 92867 US
Phone: 714-288-9682
Fax: 714-288-9643

Section 2 – Ingredient Information/Composition

Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous Components Name	CAS #	Formula	Concentration
GenAR; beta-D-Galactopyranoside, 1-methylethyl 1-thio-; isopropyl beta-D-thiogalactoside	367-93-1	C9H18O5S	0.5M

Section 3 – Hazard Identification

Emergency Overview:

WARNING! Toxicological Properties Unknown. May Be Harmful If Swallowed, Inhaled Or Absorbed Through Skin. May Cause Irritation To Skin, Eyes, And Respiratory Tract.
Ratings:
Health Rating: 1 - Slight
Flammability Rating: 1 - Slight
Reactivity Rating: 0 - None
Contact Rating: 2 - Moderate (Life)
Lab Protective Equip: Goggles; Lab Coat; Proper Gloves
Storage Color Code: Green (General Storage)

Potential Health Effects:

Information on the human health effects from exposure to this substance is limited.

Inhalation:
No information found, but compound should be handled as a potential health hazard. May cause irritation to the respiratory tract. Symptoms may include coughing, sore throat, labored breathing, and chest pain.

Ingestion:
No information found, but compound should be handled as a potential health hazard. May cause irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

Skin Contact:
No information found, but compound should be handled as a potential health hazard. May cause irritation with redness and pain. May be absorbed through the skin with possible systemic effects.

Eye Contact:
No information found, but compound should be handled as a potential health hazard. May cause irritation, redness and pain.

Chronic Exposure:
No information found.

Aggravation of Pre-existing Conditions:
No information found.

Section 4 – First Aid Measures

In Case of

Eye Contact:	Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
Skin Contact:	Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Ingestion:	Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention.
Inhalation:	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Section 5 – Fire Fighting Measures

Extinguishing Media:	Water spray, dry chemical, alcohol foam, or carbon dioxide.
Special Fire Fighting Procedures:	In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

Section 6 – Accidental Release Measures

General Information:	Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment.
Spills / Leaks:	Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

Section 7 – Handling and Storage

Freeze. Store at -15C to -21C. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

Section 8 – Exposure Controls / Personal Protection

Airborne Exposure Limits:	None established.
Ventilation System:	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.
Personal Respirators (NIOSH Approved):	For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.
Skin Protection:	Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Eye Protection:	Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area

Section 9 – Physical and Chemical Properties

Appearance:	White crystalline powder
Odor:	Odorless
Specific Gravity:	N/A
% Volatiles by volume @ 21C (70F):	N/A
pH:	N/A
Boiling Point:	N/A
Melting Point:	120 - 122C (248 - 252F)
Vapor Density (Air=1):	N/A
Vapor Pressure (mm Hg):	N/A
Evaporation Rate (BuAc=1):	N/A
Solubility:	N/A

Section 10 – Stability and Reactivity

Chemical Stability:	Stable under ordinary conditions of use and storage.
Substances To Be Avoided:	Strong oxidizers.
Hazardous, Combustion, Or Decomposition Products:	Burning may produce carbon monoxide, carbon dioxide, sulfur oxides, and nitrogen oxides.
Hazardous Polymerization:	Will not occur.
Conditions To Avoid:	Heat, flames, ignition sources and incompatibles.

Section 11 – Toxicological Information

No LD50/LC50 information found relating to normal routes of occupational exposure.

Cancer Lists:
NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
IPTG (Isopropyl-beta-D- Thiogalactopyranoside) (367-93-1)	No	No	None

Section 12 – Ecological Information

Environmental Fate: N/A

Environmental Toxicity: N/A

Section 13 – Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

Section 14 – Transport Considerations

Not regulated.

Section 15 – Regulatory Information

Chemical Inventory Status - Part 1

Ingredient	TSCA	EC	Japan	Australia
IPTG (Isopropyl-beta-D- Thiogalactopyranoside) (367-93-1)	Yes	Yes	No	No

Chemical Inventory Status - Part 2 Canada

Ingredient	Korea	DSL	NDSL	Phil.
IPTG (Isopropyl-beta-D- Thiogalactopyranoside) (367-93-1)	Yes	Yes	No	No

Federal, State & International Regulations - Part 1

	SARA 302		SARA 313	
Ingredient	RQ	TPQ	List	Chemical Catg.
IPTG (Isopropyl-beta-D- Thiogalactopyranoside) (367-93-1)	No	No	No	No

Federal, State & International Regulations - Part 2

	RCRA	TSCA	
Ingredient	CERCLA	261.33	8(d)
IPTG (Isopropyl-beta-D- Thiogalactopyranoside) (367-93-1)	No	No	No

Chemical Weapons Convention: No TSCA **12(b):** No **CDTA:** No
SARA 311/312: Acute: Yes **Chronic:** No Fire: No Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.
Poison Schedule: None allocated.
WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Section 16 – Other Information

The above information is believed to be correct, but does not purport to be all-inclusive and should be used only as a guide. Zymo Research shall not be held liable for any damage or other consequences resulting from handling or from contact with the above product. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall Zymo Research 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 Zymo Research has been advised or the possibility of such damages. All materials supplied by Zymo Research Corp are intended to be used by trained professionals and are for research use only.