MATERIAL SAFETY DATA SHEET

VIVANTIS TECHNOLOGIES SDN BHD
REVONGEN CORPORATION CENTER

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SECTION 1: CHEMICAL IDENTIFICATION

Catalogue Number: PC0708-1g; PC0708-5g; PC0708-10g
Product Name: Isopropyl-beta-D-thiogalactopyranoside (IPTG)

Intended Use:
For research use only. Not for use in diagnostic procedures.

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SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	EC No.	Index No.	%
1,4 Dioxane	123-91-1	204-661-8	603-024-00-5	≥ 10 - <30%

Synonyms: Isopropyl-β-D-thiogalactopyranoside
Chemical formula: $C_9H_{18}O_5S$
Molecular weight: 2383 g/mol

SECTION 3: HAZARDS IDENTIFICATION

GHS Classification according to CLASS regulations 2013

Serious eye damage/eye irritation – Category 2
Carcinogenicity – Category 2

GHS Label elements, including precautionary statements

Signal word: Warning

Hazard statements

H319 Causes serious eye irritation.
H351 Suspected of causing cancer.

Precautionary statements

P201 Obtain special instructions before use.
P280 Wear eye protection/face protection.
P281 Use personal protective equipment as required.
P308+P313 If exposed or concerned: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P501 Dispose of contents/container to an approved waste disposal plant.

SECTION 4: FIRST-AID MEASURES

In case of eye contact, rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician.

In case of skin contact, wash off immediately with soap and plenty of water. Consult a physician if symptoms occur.

In case of inhalation, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of ingestion, rinse mouth with water. Never give anything by mouth to an unconscious person. Consult a physician.

Symptoms and effects, both acute and delayed include nausea, vomiting, weakness, dizziness, vertigo, headache, sweating, loss of appetite, kidney injury and liver injury.

SECTION 5: FIRE FIGHTING MEASURES

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

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

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

Hazardous decomposition products formed under fire conditions: Carbon dioxide, sulphur oxides.

Flash point:	No data available.
Explosion data – sensitivity to mechanical impact:	No data available.
Explosion data – sensitivity to static discharge:	No data available.

SECTION 6: ACCIDENTAL RELEASE MEASURES

For personal protection, use personal protective equipment. Avoid dust formation. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For environmental precautions, prevent further leakage or spillage if safe to do so. Do not let product enter drains.

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

SECTION 7: HANDLING AND STORAGE

Handle in accordance with good industrial hygiene and safety practice.
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep refrigerated at 2-8 ºC.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Components	Country	Control parameters
1, 4 Dioxane	Malaysia	TWA: 20 ppm 721 mg/m^3 (skin)

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).
Face/Eye 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.
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.

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

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Light yellow
Physical state:	Powder
Odor:	No information available
Odor threshold:	No information available
Density:	No information available
pH:	No information available
Melting point/freezing point:	120-122ºC
Initial Boiling point:	No information available
Boiling point:	No information available
Flash point:	Not applicable
Autoignition temperature:	No data available
Decomposition temperature:	No information available
Upper Flammability limit in air:	No data available
Lower Flammability limit in air:	No data available
Explosive properties:	No information available
Oxidizing properties:	No information available
Solubility:	No information available
Partition coefficient (n-octanol/water):	No data available
Vapor pressure:	No data available
Vapor density:	No data available
Evaporation rate:	No data available
Specific gravity:	No data available
Viscosity:	No information available

SECTION 10: STABILITY AND REACTIVITY

Stable under recommended storage conditions.

Materials to avoid:	Oxygen, oxidizing agents, halogens, reducing agents, perchlorates, trimethylaluminum
Hazardous decomposition product:	No data available.
Possibility of hazardous reactions:	None under normal processing.
Conditions to avoid:	No data available.

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity

No data available.

Skin corrosion/irritation:	No data available
Serious eye damage/eye irritation:	No data available
Respiratory or skin sensitization:	No data available
Germ cell mutagenicity:	No data available
Reproductive toxicity:	No data available
Aspiration hazard:	No data available
STOT – single exposure:	No data available
STOT – repeated exposure:	No data available

Carcinogenicity

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

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	Causes serious eye irritation.

Signs and Symptoms of Exposure

Nausea, vomiting, weakness, dizziness, vertigo, headache, sweating, loss of appetite, kidney injury and liver injury.

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

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

No data available.

Persistence and degradability:	No information available.
Bioaccumulation/Accumulation:	No information available.
Mobility in soil:	No information available.
Other adverse effects:	No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

Dissolve or mix the unused material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
For contaminated packaging, dispose as unused material.
Offer surplus and non-recyclable solutions to a licensed disposal company.

SECTION 14: TRANSPORT INFORMATION

ADR/RID

UN No.:	-
Proper shipping name:	Not dangerous goods
Transport hazard class(es):	-
Packaging group:	-
Environmental hazards:	No

IMDG

UN No.:	-
Proper shipping name:	Not dangerous goods
Transport hazard class(es):	-
Packaging group:	-
Environmental hazards:	No

IATA-DGR

UN No.:	-
Proper shipping name:	Not dangerous goods
Transport hazard class(es):	-
Packaging group:	-
Environmental hazards:	No

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture
No data available

SECTION 16: OTHER INFORMATION

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