MATERIAL SAFETY DATA SHEET

Email: *sales@clearsynth.com, info@clearsynth.com*

SECTION-1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : Tiotropium bromide
Catalogue Number : CS-O-02442
Company Identification : Clearsynth Labs ltd.
17, Lotus Business Park ,
New Link Road, Andheri (W),
Mumbai-400 053, INDIA
For emergencies call : +91-22-245045945
Recommended use : Laboratory chemicals and Manufacture of substances

SECTION-2: HAZARDS IDENTIFICATION

GHS Hazards Classification:
No data available.
GHS label elements and hazardous statements:
No data available.
Hazard statement(s):
No data available.
GHS Precautionary Statements:
No data available.
Hazards not otherwise classified (HNOC) or not covered by GHS:
No data available.

SECTION-3: COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Not available
CAS Number : 136310-93-5
Molecular formula : $C_{19}H_{22}BrNO_4S_2$
Molecular weight : 472.42 g/mol

SECTION-4: FIRST AID MEASURES

Description of first aid measures
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance.
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.

SECTION-5: FIRE FIGHTING MEASURES

Suitable Extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Chemical hazards from arising from substance fire
During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Advice for firefighters
Wear self-contained breathing apparatus and full protective gear to prevent contact with skin and eyes.

SECTION-6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Use personal protective equipment as indicated in Section 8. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
Environmental precautions
Do not let product enter drains or water sources.
Cleaning up of Spills/Leaks
Vacuum or sweep up material and place into suitable disposal container without creating dust.

SECTION-7: HANDLING AND STORAGE

Precautions for safe handling

Avoid contact with eyes, skin, and clothing.
Avoid ingestion and inhalation.
Keep away from sources of ignition.

Storage

Keep container tightly closed.
Store at 2 to 8˚C

SECTION-8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Appropriate engineering controls

Follow safe industrial engineering/laboratory practices when handling any chemical.

Personal Protective Equipment

Eyes: Wear safety glasses and chemical goggles if splashing is possible.
Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.
Clothing: Wear appropriate protective clothing to minimize contact with skin.
Respirators: Wear a NIOSH/MSHA or European Standard EN 149 approved full-face piece airline respirator in the positive pressure mode with emergency escape provisions.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State	:	Powder
Color	:	White
Odor	:	No data available.
pH	:	No data available.
Vapor Pressure	:	No data available.
Viscosity	:	No data available.
Boiling Point	:	No data available.
Melting Point	:	No data available.
Auto ignition Temperature	:	No data available.
Flash Point	:	No data available.
Explosion Limits, lower	:	No data available.
Explosion Limits, upper	:	No data available.
Decomposition Temperature	:	No data available.
Loss on Drying	:	No data available.
Specific Gravity/Density	:	No data available.
Solubility	:	In DMSO

SECTION 10 - STABILITY AND REACTIVITY

Chemical Stability

Stable under recommended storage conditions.

Conditions to Avoid

No data available.

Incompatibilities with Other Materials

Strong oxidizing agents, strong bases.

Hazardous Decomposition Products

No data available.

Hazardous Polymerization

No data available.

SECTION 11 – TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute toxicity	**:** No data available.
Skin irritation/corrosion	**:** No data available.
Eye damage/irritation	**:** No data available.
Respiratory or skin sensitization	**:** No data available.
Germ cell mutagenicity	**:** No data available.
Carcinogenicity	**:** No data available.
Reproductive toxicity	**:** No data available.
Special Remarks on other toxic Effects on Humans	**:** No data available.
Routes of Exposure	**:** Inhalation, Eye contact, Ingestion, Skin contact.

SECTION 12 – ECOLOGICAL INFORMATION

No data available.

SECTION 13 – DISPOSAL CONSIDERATIONS

Dispose in a manner consistent with country, state and local regulations. Product is not to be disposed of in sanitary sewers, storm sewers, or landfills. Contact a licensed professional waste disposal service to dispose of this material.

SECTION 14 – TRANSPORT INFORMATION

UN Number:

DOT (US)	: No data available.
IATA	: No data available.
IMDG	: No data available.
ADR/RID	: No data available.

UN Proper Shipping Name:

DOT (US)/IATA	: Not dangerous goods.
IMDG/ADR/RID	: Not dangerous goods.

Transport Hazard Class (es):

DOT (US)	: No data available.
IATA	: No data available.
IMDG	: No data available.
ADR/RID	: No data available.

Packing Group:

DOT (US)	: No data available.
IATA	: No data available.
IMDG	: No data available.
ADR/RID	: No data available.

Environmental Hazards:

DOT (US)	: No data available.
IATA	: No data available.
IMDG	: No data available.
ADR/RID	: No data available.

SECTION 15 – REGULATORY INFORMATION

This safety data sheet complies with the requirements OHSAS 18001:2007.

SECTION 16 – ADDITIONAL INFORMATION

The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. 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 way 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.

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