



Material Safety Data Sheet (MSDS)

Product and Company Identification

| | |
|-------------------------------|---|
| Product Name | Sodium isobutyl xanthate (SIBX) |
| Use | Purification, adsorption of contaminants |
| Distributor/Agent | 7D Holdings SA (Pty) Ltd |
| Address | Unit E26, U Can Store Storage 30 Elandclose Alberton, 1449 Johannesburg, RSA |
| Telephone Number | +27 (0)11 057 6755 |
| Fax Number | +27 (0)86 733 8598 |
| Email | info@7dholdings.com / sales@7dholdings.com |
| Country of Manufacture | South Africa |

1. IDENTIFICATION

| | |
|----------------------------|---|
| Other Names | Sodium O-isobutyl dithiocarbonate |
| Uses | Flotation agent in mining and metal extraction. |
| Chemical Family | Xanthates |
| Chemical Formula | C ₅ H ₉ NaOS ₂ |
| Chemical Name | Carbonodithioic acid, O-(2-methylpropyl) ester, sodium salt |
| Product Description | No Data Available |

2. HAZARD IDENTIFICATION

| | |
|------------------------------|--|
| Hazard Classification | Hazardous according to the criteria of the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) |
|------------------------------|--|

Pictograms



Signal Word

Warning

Hazard Statements

| | |
|--------------------|---|
| H252 | Self-heating in large quantities; may catch fire. |
| H302 + H312 | Harmful if swallowed or in contact with skin. |
| H315 | Causes skin irritation. |
| H319 | Causes serious eye irritation. |
| H335 | May cause respiratory irritation. |

Precautionary Statements Prevention

| | |
|--------------------|--|
| P280 | Wear protective gloves/protective clothing/eye protection/face protection. |
| P261 | Avoid breathing dust. |
| P235 + P410 | Keep cool. Protect from sunlight. |
| P270 | Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. |



Material Safety Data Sheet (MSDS)

| | | |
|----------|---------------------------|--|
| Response | P312 | Call a POISON CENTER or doctor/physician if you feel unwell. |
| | P302 + P352 | IF ON SKIN: Wash with plenty of soap and water. |
| | P337 + P313 | If eye irritation persists: Get medical advice/attention. |
| | P330 | Rinse mouth. |
| | P332 + P313 | If skin irritation occurs: Get medical advice/attention. |
| | P362 | Take off contaminated clothing and wash before reuse. |
| | P305 + P351 + P338 | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| | P304 + P340 | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. |
| Storage | P407 | Maintain air gap between stacks/pallets. |
| | P420 | Store away from other materials. |
| | P403 + P233 | Store in a well-ventilated place. Keep container tightly closed. |
| | P405 | Store locked up. |
| Disposal | P501 | Dispose of contents/container in accordance with local / regional / national / international regulations. |

| | | | |
|-----------------------------|-----------------------|-------------|--|
| HSNO Classifications | Physical Hazards | 4.2B | Spontaneously combustible substances: self-heating substances: medium hazard |
| | Health Hazards | 6.1D | Substances that are acutely toxic - Harmful |
| | | 6.3A | Substances that are irritating to the skin |
| | | 6.4A | Substances that are irritating to the eye |
| | Environmental Hazards | 9.3B | Substances that are ecotoxic to terrestrial vertebrates |



Material Safety Data Sheet (MSDS)

3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

| Chemical Entity | Formula | CAS Number | Proportion |
|----------------------------------|---|-------------|------------|
| Sodium isobutyl xanthate | C ₅ H ₉ NaOS ₂ | 25306-75-6 | >=90 % |
| Free alkali (Sodium hydroxide) | NaOH | 1310-73-2 | <=0.2 % |
| Other, non-hazardous ingredients | Unspecified | Unspecified | Balance % |

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

| | |
|--|--|
| Swallowed | IF SWALLOWED: Rinse mouth, then drink 200 - 300 ml of water. Do not induce vomiting. Call a Poison Centre or doctor/physician for advice. |
| Eye | IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Call a Poison Centre or doctor/physician for advice. |
| Skin | IF ON SKIN (or hair): Remove contaminated clothing and shoes immediately. Wash skin and hair with plenty of soap and water. Call a Poison Centre or doctor/physician if you feel unwell. If skin irritation occurs, get medical advice/attention. Wash contaminated clothing and shoes before reuse. |
| Inhaled | IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a Poison Centre or doctor/physician for advice. Apply resuscitation if victim is not breathing. Administer oxygen if breathing is difficult. |
| Advice to Doctor | Treat symptomatically. Ensure that attending medical personnel are aware of identity and nature of the product(s) involved, and take precautions to protect themselves. Effects of exposure may be delayed. |
| Medical Conditions Aggravated by Exposure | No information available. |

5. FIRE FIGHTING MEASURES

| | |
|---|---|
| General Measures | If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out - Avoid getting water inside containers or in contact with substance. |
| Flammability Conditions | SPONTANEOUSLY COMBUSTIBLE SUBSTANCE: May ignite on contact with air, moist air or water. |
| Extinguishing Media | Use dry chemical, dry sand, soda ash or lime for extinction OR withdraw and let fire burn. Do NOT use water, Carbon dioxide (CO ₂) or foam on the substance itself. Try to exclude Oxygen. |
| Fire and Explosion Hazard | Risk of violent reaction or explosion - May react vigorously or explosively on contact with water. May produce flammable, toxic and/or corrosive gases on contact with air, moist air or water. May re-ignite after fire is extinguished. Containers may explode when heated. |
| Hazardous Products of Combustion | Fire will produce irritating, toxic and/or corrosive gases, including Carbon disulfide, Hydrogen sulfide. |
| Special Fire Fighting Instructions | Contain runoff from fire control water - Runoff may pollute waterways; Runoff may create multiple fire or explosion hazard. |
| Personal Protective Equipment | Wear self-contained breathing apparatus (SCBA) in combination with normal firefighting clothing (full fire kit). |
| Flash Point | No Data Available |



Material Safety Data Sheet (MSDS)

| | |
|---------------------------|-------------------|
| Lower Explosion Limit | No Data Available |
| Upper Explosion Limit | No Data Available |
| Auto Ignition Temperature | No Data Available |
| Hazchem Code | 1Y |

6. ACCIDENTAL RELEASE MEASURES

| | |
|--|--|
| General Response Procedure | Try to exclude Oxygen. ELIMINATE all ignition sources (no smoking, flares, sparks or flames). Do not touch or walk through spilled material. Avoid breathing dust and prevent contact with eyes, skin and clothing. |
| Clean Up Procedures | Vacuum or use clean, non-sparking tools to collect material and place it into suitable, labelled containers for disposal (see SECTION 13). Do NOT get water inside containers or in contact with substance. |
| Containment | Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust cloud - Cover with DRY earth, sand or other dry, non-combustible material. Keep the spill compact - Do not permit material to scatter or spread. |
| Decontamination | After cleaning, flush away any residual traces with water. |
| Environmental Measures | Precautionary Spillages and decontamination runoff should be prevented from entering drains and watercourses. |
| Evacuation Criteria | Spill or leak area should be isolated immediately. Keep unauthorised personnel away. Keep upwind and to higher ground. Large spill: Consider downwind evacuation of areas within at least 250 m. |
| Personal Precautionary Measures | Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (see SECTION 8). |

7. HANDLING AND STORAGE

| | |
|------------------|--|
| Handling | Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Use only outdoors or in a well-ventilated place. Handle in accordance with good industrial hygiene and safety practice. Avoid dust formation. Avoid breathing dust and prevent contact with eyes, skin and clothing. Wear protective gloves/protective clothing/eye protection/face protection (see SECTION 8). Keep away from heat and sources of ignition - No smoking. Take precautionary measures against static discharge. |
| Storage | Store in a cool, dry and well-ventilated place. Protect from sunlight. Keep container tightly closed - Check regularly for spills. Avoid exposure to air and water/moisture (hygroscopic). Maintain air gap between stacks/pallets. Keep away from heat and sources of ignition. Store away from foodstuffs and other/incompatible materials (see SECTION 10). Store locked up. |
| Container | Keep in the original container. |

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

| | |
|-----------------------------|---|
| General | No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards COMPONENT: Sodium hydroxide (CAS No. 1310-73-2) DECOMPOSITION PRODUCT: Carbon disulphide (CAS No. 75-15-0) |
| Exposure Limits | No Data Available |
| Biological Limits | No information available. |
| Engineering Measures | 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. Use explosion-proof electrical/ventilating/lighting equipment. |



Material Safety Data Sheet (MSDS)

Personal Protection Equipment

- Respiratory protection: Wear respiratory protection if an inhalation risk exists. Recommended: Dust mask/particulate respirator; Supplied-air respirator if risk of exposure to products of decomposition (refer to AS/NZS 1715 & 1716).

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|--|
| Physical State | Solid |
| Appearance | Powder or pellets |
| Odour | Unpleasant; Sulphurous |
| Colour | Yellow or grey |
| pH | No Data Available |
| Vapour Pressure | No Data Available |
| Relative Vapour Density | No Data Available |
| Boiling Point | No Data Available |
| Melting Point | No Data Available |
| Freezing Point | No Data Available |
| Solubility | Soluble in water |
| Specific Gravity | 1.17 - 1.18 |
| Flash Point | No Data Available |
| Auto Ignition Temp | No Data Available |
| Evaporation Rate | No Data Available |
| Bulk Density | No Data Available |
| Corrosion Rate | No Data Available |
| Decomposition Temperature | No Data Available |
| Density | No Data Available |
| Specific Heat | No Data Available |
| Molecular Weight | 173.255 g/mol (SIBX) |
| Net Propellant Weight | No Data Available |
| Octanol Water Coefficient | No Data Available |
| Particle Size | No Data Available |
| Partition Coefficient | No Data Available |
| Saturated Vapour Concentration | No Data Available |
| Vapour Temperature | No Data Available |
| Viscosity | No Data Available |
| Volatile Percent | No Data Available |
| VOC Volume | No Data Available |
| Additional Characteristics | No information available. |
| Potential for Dust Explosion | Dust may form explosive mixtures with air. |
| Fast or Intensely Burning Characteristics | No information available. |
| Flame Propagation or Burning Rate of Solid Materials | No information available. |
| Non-Flammables That Could Contribute Unusual Hazards to a Fire | No information available. |
| Properties That May Initiate or Contribute to Fire Intensity | SPONTANEOUSLY COMBUSTIBLE SUBSTANCE: May ignite on contact with air, moist air or water. |



Material Safety Data Sheet (MSDS)

| | |
|---|---|
| Reactions That Release Gases or Vapours | May produce toxic and/or corrosive gases on contact with air, moist air or water. Fire will produce irritating, toxic and/or corrosive gases, including Carbon disulfide, Hydrogen sulfide. |
| Release of Invisible Flammable Vapours and Gases | May produce flammable gases on contact with air, moist air or water. |

10. STABILITY AND REACTIVITY

| | |
|---|---|
| General Information | Reacts exothermically on contact with water producing Carbon disulfide. |
| Chemical Stability | Stable under normal conditions of use. |
| Conditions to Avoid | Avoid dust formation. Avoid exposure to moisture/water. Keep away from heat and sources of ignition. |
| Materials to Avoid | Incompatible/reactive with water, oxidising agents, combustible materials, acids, phosgene, sulfur chlorides, copper and copper alloys. |
| Hazardous Decomposition Products | May produce toxic and/or corrosive gases on contact with air, moist air or water. Fire will produce irritating, toxic and/or corrosive gases, including Carbon disulfide, Hydrogen sulfide. |
| Hazardous Polymerisation | Will not occur. |

11. TOXICOLOGICAL INFORMATION

| | |
|----------------------------|--|
| General Information | <ul style="list-style-type: none">- Acute toxicity: Harmful if swallowed and in contact with skin. May cause nausea, vomiting, diarrhoea, abdominal pain, convulsions and loss of consciousness. Will liberate Carbon disulfide in contact with moist skin, which can be absorbed through the skin.- Skin corrosion/irritation: Causes skin irritation.- Eye damage/irritation: Causes serious eye irritation.- Respiratory/skin sensitisation: No information available.- Germ cell mutagenicity: No information available.- Carcinogenicity: No information available.- Reproductive toxicity: No information available on the product itself. DECOMPOSITION PRODUCT: Carbon disulfide (CAS No. 75-15-0) is suspected of damaging fertility and suspected of damaging the unborn child.- STOT (single exposure): May cause respiratory irritation; High concentrations can produce central nervous system depression, leading to loss of co-ordination, impaired judgement and unconsciousness.- STOT (repeated exposure): No information available on the product itself. DECOMPOSITION PRODUCT: Carbon disulfide (CAS No. 75-15-0) causes damage to organs through prolonged or repeated exposure if inhaled.- Aspiration toxicity: No information available. |
| Acute | |
| Ingestion | Acute toxicity (Oral): COMPONENT: Sodium isobutyl xanthate (CAS No. 25306-75-6): - LD50, Rats: 500 mg/kg bw. |
| Carcinogen Category | None |

12. ECOLOGICAL INFORMATION

| | |
|----------------------------------|---|
| Ecotoxicity | No information available. |
| Persistence/Degradability | No information available. |
| Mobility | No information available. |
| Environmental Fate | Prevent entry into soils, drains and waterways. |
| Bioaccumulation Potential | No information available. |
| Environmental Impact | No Data Available |



Material Safety Data Sheet (MSDS)

13. DISPOSAL CONSIDERATIONS

General Information Dispose of contents/container through a licensed waste contractor and in accordance with local/regional/national regulations.

Special Precautions for Land Fill No information available.



Material Safety Data Sheet (MSDS)

14. TRANSPORT INFORMATION

Land Transport (Australia)

ADG Code

| | |
|----------------------|---|
| Proper Shipping Name | XANTHATES |
| Class | 4.2 Flammable Solids - Substances liable to spontaneous combustion |
| Subsidiary Risk(s) | No Data Available |
| EPG | 25 Spontaneously Combustible Substances (Air And/Or Water Reactive) |
| UN Number | 3342 |
| Hazchem | 1Y |
| Pack Group | III |
| Special Provision | No Data Available |

Land Transport (Malaysia)

ADR Code

| | |
|----------------------|---|
| Proper Shipping Name | XANTHATES |
| Class | 4.2 Flammable Solids - Substances liable to spontaneous combustion |
| Subsidiary Risk(s) | No Data Available |
| EPG | 25 Spontaneously Combustible Substances (Air And/Or Water Reactive) |
| UN Number | 3342 |
| Hazchem | 1Y |
| Pack Group | III |
| Special Provision | No Data Available |

Land Transport (New Zealand)

NZS5433

| | |
|----------------------|---|
| Proper Shipping Name | XANTHATES |
| Class | 4.2 Flammable Solids - Substances liable to spontaneous combustion |
| Subsidiary Risk(s) | No Data Available |
| EPG | 25 Spontaneously Combustible Substances (Air And/Or Water Reactive) |
| UN Number | 3342 |
| Hazchem | 1Y |
| Pack Group | III |
| Special Provision | No Data Available |

Land Transport (United States of America)

US DOT

| | |
|----------------------|--|
| Proper Shipping Name | XANTHATES |
| Class | 4.2 Flammable Solids - Substances liable to spontaneous combustion |
| Subsidiary Risk(s) | No Data Available |
| ERG | 135 Substances - Spontaneously Combustible |
| UN Number | 3342 |
| Hazchem | 1Y |
| Pack Group | III |
| Special Provision | No Data Available |



Material Safety Data Sheet (MSDS)

Sea Transport

IMDG Code

| | |
|-----------------------------|--|
| Proper Shipping Name | XANTHATES |
| Class | 4.2 Flammable Solids - Substances liable to spontaneous combustion |
| Subsidiary Risk(s) | No Data Available |
| UN Number | 3342 |
| Hazchem | 1Y |
| Pack Group | III |
| Special Provision | No Data Available |
| EMS | F-A, S-J |
| Marine Pollutant | No |

Air Transport

IATA DGR

| | |
|-----------------------------|--|
| Proper Shipping Name | XANTHATES |
| Class | 4.2 Flammable Solids - Substances liable to spontaneous combustion |
| Subsidiary Risk(s) | No Data Available |
| UN Number | 3342 |
| Hazchem | 1Y |
| Pack Group | III |
| Special Provision | No Data Available |

Dangerous Goods Classification Dangerous Goods according to the criteria of the Australian Code for the Transport of Dangerous Goods by Road & Rail (ADG Code)

15. REGULATORY INFORMATION

| | |
|--------------------------------|-------------------|
| General Information | No Data Available |
| Poisons Schedule (Aust) | Not Scheduled |