# Safety Data Sheet

**acc. to OSHA HCS (29CFR 1910.1200) and WHMIS 2015 Regulations**

Printing date: November 07, 2017 Revision: November 07, 2017

## 1 Identification

· **Product identifier**

· **Trade name: TMB**
· **Product code:** 90023

· **Recommended use and restriction on use**
· **Recommended use:** Laboratory chemicals
· **Restrictions on use:** For Research Use Only – Not Human or Therapeutic Use

· **Details of the supplier of the Safety Data Sheet**
· **Manufacturer/Supplier:**
Chondrex, Inc.
16928 Woodinville-Redmond Rd NE Suite B-101
Woodinville, WA 98072
USA
425-702-6365
support@chondrex.com
· **Emergency telephone number:**
ChemTel LLC
800-255-3924 (North America)
(+1) 813-248-0585 (International)

## 2 Hazard(s) identification

· **Classification of the substance or mixture**

| | | |
|---|---|---|
| Flam. Liq. 4 | H227 | Combustible liquid. |
| Muta. 2 | H341 | Suspected of causing genetic defects. |
| Carc. 2 | H351 | Suspected of causing cancer. |

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms:**

GHS08

· **Signal word:** Warning
· **Hazard statements:**
H227 Combustible liquid.
H341 Suspected of causing genetic defects.
H351 Suspected of causing cancer.
· **Precautionary statements:**

| | |
|---|---|
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P210 | Keep away from flames and hot surfaces. – No smoking. |
| P280 | Wear protective gloves/protective clothing/eye protection. |
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |
| P370+P378 | In case of fire: Use for extinction: CO2, powder or water spray. |
| P403+P235 | Store in a well-ventilated place. Keep cool. |

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P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Additional information:**
1.5 % of the mixture consists of component(s) of unknown toxicity.

· **Other hazards** There are no other hazards not otherwise classified that have been identified.

## 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

| | | | |
|---|---|---|---|
| 67-68-5 | dimethyl sulfoxide | Flam. Liq. 4, H227 | >90% |
| 54827-17-7 | 3,3',5,5'-tetramethylbenzidine | Muta. 2, H341; Carc. 2, H351<br>Acute Tox. 4, H302 | 1-1.5% |

· **Additional information:** For the wording of the listed Hazard Statements, refer to section 16.

## 4 First-aid measures

· **Description of first aid measures**
· **After inhalation:** Supply fresh air; consult doctor in case of complaints.
· **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment in case of complaints.
· **After eye contact:**
Remove contact lenses if worn.
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
· **After swallowing:**
Rinse out mouth and then drink plenty of water.
Do not induce vomiting; immediately call for medical help.
· **Most important symptoms and effects, both acute and delayed:**
Slight irritant effect on eyes.
May cause gastro-intestinal irritation if ingested.
Nausea in case of ingestion.
· **Danger:**
Suspected of causing genetic defects.
Suspected of causing cancer.
· **Indication of any immediate medical attention and special treatment needed:** Treat symptomatically.

## 5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray.
· **For safety reasons unsuitable extinguishing agents:** None.

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· **Special hazards arising from the substance or mixture**
Combustible liquid.
Formation of toxic gases is possible during heating or in case of fire.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information:**
Eliminate all ignition sources if safe to do so.
Cool endangered product with water spray.

## 6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.
Keep away from ignition sources.
· **Environmental precautions** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up**
Absorb with non-combustible liquid-binding material (sand, diatomite, acid binders, universal binders).
Send for recovery or disposal in suitable receptacles.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

## 7 Handling and storage

· **Handling**
· **Precautions for safe handling:**
Avoid contact with the eyes and skin.
Avoid breathing mist, vapors, or spray.
Prevent formation of aerosols.
Avoid splashes or spray in enclosed areas.
Use only in well ventilated areas.
· **Information about protection against explosions and fires:**
Combustible liquid.
Keep ignition sources away - Do not smoke.

· **Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:**
Avoid storage near extreme heat, ignition sources or open flame.
Store in cool, dry conditions in well sealed receptacles.
· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.

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· **Specific end use(s)** No relevant information available.

## 8 Exposure controls/personal protection

· **Control parameters**

| · **Components with limit values that require monitoring at the workplace:** | |
|---|---|
| **67-68-5 dimethyl sulfoxide** | |
| WEEL (USA) | Long-term value: 250 ppm |

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Engineering controls:** Provide adequate ventilation.
· **Breathing equipment:** Use suitable respiratory protective device when aerosol or mist is formed.
· **Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
· **Eye protection:**

Safety glasses

Follow relevant national guidelines concerning the use of protective eyewear.
· **Body protection:** Protective work clothing
· **Limitation and supervision of exposure into the environment**
No relevant information available.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **Appearance:**

| | |
|---|---|
| **Form:** | Liquid |
| **Color:** | Clear to straw color. |
| · **Odor:** | Characteristic |
| · **Odor threshold:** | Not determined. |
| · **pH-value:** | Not determined. |
| · **Melting point/Melting range:** | ~18.5 °C (~65.3 °F) |

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| | |
|---|---|
| · **Boiling point/Boiling range:** | ~189 °C (~372.2 °F) |
| · **Flash point:** | ~87 °C (~188.6 °F) |
| · **Flammability (solid, gaseous):** | Not applicable. |
| · **Auto-ignition temperature:** | >300 °C (>572 °F) |
| · **Decomposition temperature:** | Not determined. |
| · **Danger of explosion:** | Not determined. |
| · **Explosion limits** | |
| **Lower:** | 2.6 Vol % |
| **Upper:** | 28.5 Vol % |
| · **Oxidizing properties:** | Non-oxidizing. |
| · **Vapor pressure at 20 °C (68 °F):** | ~0.417 mmHg |
| · **Density:** | |
| **Relative density:** | ~1.1 |
| **Vapor density:** | Not determined. |
| **Evaporation rate:** | Not determined. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Fully miscible. |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Viscosity** | |
| **Dynamic:** | Not determined. |
| **Kinematic:** | Not determined. |
| · **Other information** | No relevant information available. |

## 10 Stability and reactivity

· **Reactivity:** No relevant information available.
· **Chemical stability:** Stable under normal temperatures and pressures.
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used and stored according to specifications.
· **Possibility of hazardous reactions**
Combustible liquid.
Used empty containers may contain product gases which form explosive mixtures with air.
Can form explosive mixtures in air if heated above flash point and/or when sprayed or atomized.
Toxic fumes may be released if heated above the decomposition point.
Reacts with strong acids and alkali.
Reacts with strong oxidizing agents.
· **Conditions to avoid** Excessive heat.
· **Incompatible materials** Oxidizers, strong bases, strong acids
· **Hazardous decomposition products**

Under fire conditions only:

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Sulfur oxides (SOx)
Nitrogen oxides (NOx)
Carbon monoxide and carbon dioxide

## 11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **LD/LC50 values that are relevant for classification:** None.
· **Primary irritant effect:**
· **On the skin:** Based on available data, the classification criteria are not met.
· **On the eye:** Based on available data, the classification criteria are not met.
· **Sensitization:** Based on available data, the classification criteria are not met.

| · **IARC (International Agency for Research on Cancer):** |
|---|
| None of the ingredients are listed. |
| · **NTP (National Toxicology Program):** |
| None of the ingredients are listed. |
| · **OSHA-Ca (Occupational Safety & Health Administration):** |
| None of the ingredients are listed. |

· **Probable route(s) of exposure:**
Ingestion.
Inhalation.
Eye contact.
Skin contact.
· **Germ cell mutagenicity:** Suspected of causing genetic defects.
· **Carcinogenicity:** Suspected of causing cancer.
· **Reproductive toxicity:** Based on available data, the classification criteria are not met.
· **STOT-single exposure:** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
· **Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12 Ecological information

· **Toxicity**
· **Aquatic toxicity** The product contains materials that are harmful to the environment.
· **Persistence and degradability** No relevant information available.
· **Bioaccumulative potential:** No relevant information available.
· **Mobility in soil:** No relevant information available.
· **Additional ecological information**
· **General notes:** Do not allow product to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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· **Other adverse effects** No relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

· **Uncleaned packagings**
· **Recommendation:** Disposal must be made according to official regulations.

## 14 Transport information

| | |
|---|---|
| · **UN-Number** | |
| · **DOT** | NA1993 |
| · **ADR, IMDG, IATA** | Not regulated. |
| · **UN proper shipping name** | |
| · **DOT** | Combustible liquid, n.o.s. (dimethyl sulfoxide) |
| · **ADR, IMDG, IATA** | Not regulated. |
| · **Transport hazard class(es)** | |
| · **DOT** | |
| | |
| · **Class** | 3 Combustible liquids |
| · **Label** | 3 |
| · **ADR, IMDG, IATA** | |
| · **Class** | Not regulated. |
| · **Packing group** | |
| · **DOT** | III |
| · **ADR, IMDG, IATA** | Not regulated. |
| · **Environmental hazards** | |
| · **Marine pollutant:** | No |
| · **Special precautions for user** | Not applicable. |
| · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |

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· **Transport/Additional information:**

· **DOT** Classified as combustible under US DOT regulations. Labeling is only required for single packages ≥119 US gal / 450 L.

## 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **United States (USA)**
· **SARA**

| · **Section 302 (extremely hazardous substances):** |
|---|
| None of the ingredients are listed. |
| · **Section 355 (extremely hazardous substances):** |
| None of the ingredients are listed. |
| · **Section 313 (Specific toxic chemical listings):** |
| None of the ingredients are listed. |
| · **TSCA (Toxic Substances Control Act)** |
| All ingredients are listed. |

· **Proposition 65 (California)**

| · **Chemicals known to cause cancer:** |
|---|
| None of the ingredients are listed. |
| · **Chemicals known to cause reproductive toxicity for females:** |
| None of the ingredients are listed. |
| · **Chemicals known to cause reproductive toxicity for males:** |
| None of the ingredients are listed. |
| · **Chemicals known to cause developmental toxicity:** |
| None of the ingredients are listed. |

· **Carcinogenic categories**

| · **EPA (Environmental Protection Agency):** |
|---|
| None of the ingredients are listed. |
| · **IARC (International Agency for Research on Cancer):** |
| None of the ingredients are listed. |
| · **NIOSH-Ca (National Institute for Occupational Safety and Health):** |
| None of the ingredients are listed. |
| · **Canadian Domestic Substances List (DSL):** |
| All ingredients are listed. |

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## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** November 07, 2017 / -

· **Abbreviations and acronyms:**
ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistant, Bio-accumulable, Toxique
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety and Health
OSHA: Occupational Safety & Health Administration
Flam. Liq. 4: Flammable liquids – Category 4
Acute Tox. 4: Acute toxicity – Category 4
Muta. 2: Germ cell mutagenicity – Category 2
Carc. 2: Carcinogenicity – Category 2

· **Sources**
Website, European Chemicals Agency (echa.europa.eu)
Website, US EPA Substance Registry Services (ofmpub.epa.gov/sor internet/registry/substreg/home/overview/home.do)
Website, Chemical Abstracts Registry, American Chemical Society (www.cas.org)
Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6
Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.
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