




Metabiologics 	SAFETY DATA SHEET	PAGE: 1 of 9
TITLE: Safety Data Sheet (SDS) for <i>Clostridium botulinum</i> Neurotoxin, Serotypes A-G		
DOCUMENT NUMBER: SDS-MTA-002	VERSION: 01	OWNER: EHS
		EFFECTIVE DATE: 01-MAY-2022


Section 1: Identification	
1.1 Product Name	Botulinum neurotoxin, Serotypes A-G (Protein neurotoxin produced by <i>Clostridium botulinum</i> bacteria).
1.2 Relevant identified uses of the substance or mixture and uses advises against	Laboratory and research use only. Material is not suitable for clinical, veterinary nor diagnostic use. Not for human use.
1.3 Details of the supplier of the safety data sheet	Metabiologics 505 South Rosa Road Madison, WI 53719 USA Telephone: 1-949-269-3260
1.4 Emergency Phone #	+1-813/248-0573 or 800/ 255-3924 VelocityEHS (ChemTel) MIS0003127

Section 2: Hazard(s) Identification	
2.1 Classification of the substance or mixture	Acute toxicity, oral (Category 1), H300
2.2 GHS Label Elements, including precautionary statements	H300 + H330 Fatal if swallowed or if inhaled P262 Do not get in eyes, on skin, or on clothing. P264 Wash hands thoroughly after handling. P270 Do not eat, drink, or smoke when using this product. P280 Wear protective gloves/protective clothing/eye protection/face protection. P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. P320 Specific treatment is urgent. See Section 4.
2.3 Hazards not otherwise classified (HNOC) or not covered by GHS	No data available
2.4 Pictogram	
2.5 Description of Other Hazards	Botulinum neurotoxin (Types A-G) should be handled under conditions which minimize possible exposure from injection, ingestion, and inhalation. Avoid the formation of aerosols. Biohazard, Biosafety Level 2, Hazard Group 2: biological agent that can cause human disease and might be a hazard to workers, but it is unlikely to spread to the community.

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Section 3: Composition/Information on Ingredients			
3.1 Substances			
Chemical Name	CAS #	Classification	Concentration
Botulinum Toxin, Serotype A	CAS #93384-43-1	Acute Tox. 1; H300	0.1 – 1%
Botulinum Toxin, Serotype B	CAS #93384-44-2	Acute Tox. 1; H300	0.1 – 1%
Botulinum Toxin, Serotype C	CAS #93384-45-3	Acute Tox. 1; H300	0.1 – 1%
Botulinum Toxin, Serotype D	CAS #93384-46-4	Acute Tox. 1; H300	0.1 – 1%
Botulinum Toxin, Serotype E	CAS #93384-47-5	Acute Tox. 1; H300	0.1 – 1%
Botulinum Toxin, Serotype F	CAS #107231-15-2	Acute Tox. 1; H300	0.1 – 1%
Botulinum Toxin, Serotype G	CAS #107231-16-3	Acute Tox. 1; H300	0.1 – 1%
Full text of H statements: Acute Tox- Acute toxicity H300 + H330– Fatal if swallowed or if inhaled			

Section 4: First-Aid Measures	
4.1 Description of first-aid measures	<p>General advice Show this safety data sheet to the physician.</p> <p>If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Take victim immediately to hospital.</p> <p>In case of skin contact Flush with copious amounts of soap and water for at least 5 minutes. Remove contaminated clothing and shoes and discard. Consult a physician.</p> <p>In case of eye contact Flush with copious amounts of water for a least 15 minutes. Assure adequate flushing by separating eyelids with fingers. Remove contact lenses. Take victim immediately to hospital. Consult a physician.</p> <p>If swallowed Never give anything by mouth to an unconscious person. Rinse mouth with water. Take victim immediately to hospital. Consult a physician. If injected Take victim immediately to hospital. Consult a physician.</p>
4.2 Most important symptoms and effects, both acute and delayed	Blurred/ double vision, drooping eyelids, dry mouth, slurred speech, dizziness, shortness of breath, weakness in muscles in a descending pattern.
4.3 Indication of any immediate medical attention and special treatment needed	Immediate medical attention is required following exposure or possibility of exposure via ingestion, injection, inhalation, or mucous membranes. Special treatment may be required as specified in section 4.4.
4.4 Additional Information	USA CDC may be able to assist physicians in acquiring BAT® (botulinum antitoxin heptavalent) in case of exposure. Phone requests may be made to CDC at U.S.A. 404-639-3311 from 8:00 A.M. to 4:30 P.M. Monday through Friday. After working hours or on weekends and holidays call U.S.A. 404-639-2888.

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Section 5: Fire-Fighting Measures


5.1 Extinguishing media	<p>Suitable extinguishing agents Water Spray, Carbon Dioxide, Dry Chemical Powder, or Polymer Foam</p> <p>Unsuitable extinguishing media For this substance/mixture no limitations of extinguishing agents are given</p>
5.2 Special hazards arising from the substance or mixture	No data available
5.3 Advice for firefighters	Wear self-contained breathing apparatus and protective clothing to prevent contact with lungs and eyes
5.4 Further information	No data available

Section 6: Accidental Release Measures

6.1 Personal Precautions, protective equipment, and emergency procedures	Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. For personal protection, see section 8.
6.2 Environmental Precautions	Do not let product enter drains
6.3 Methods and materials for containment and cleaning up	<p>Leave area immediately. Allow aerosols to dissipate for at least 30 minutes. Decontaminate spill with 5.0-6.25% sodium hypochlorite (undiluted bleach) solution. Undiluted sodium hypochlorite is used to ensure that the final concentration of oxidizer is >0.1%. Allow a minimum contact time of 30 minutes.</p> <p>Absorb spill with absorbent material such as paper toweling and place in biohazard bag for disposal.</p> <p>Ventilate area and wash spill site with >0.1% sodium hypochlorite after material pickup is complete.</p>
6.4 Reference to other sections	For disposal, see section 13

Section 7: Handling and Storage


7.1 Precautions for safe handling	<p>Botulinum neurotoxin (Types A-G) may be safely handled under BSL (biosafety level) 2 conditions. Class II biological safety cabinets should be utilized whenever possible. Toxin solutions and lyophilized product may be handled if PPE is worn. All operations with potential for aerosol production should be conducted in a biosafety cabinet or other similar enclosure to avoid accidental contact.</p> <p>Botulinum neurotoxin (Types A-G) liquid may be toxic by injection through skin and if swallowed or aerosolized and inhaled.</p> <p>If you feel unwell, seek medical advice (show the label where possible).</p> <p>Biomedical material. May cause human disease.</p> <p>Target Organ(s): Nervous system</p>
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Section 7: Handling and Storage	
7.2 Conditions for safe storage, including any incompatibilities	Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature 2-8°.
7.3 Specific end use(s)	Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

Section 8: Exposure Controls/Personal Protection	
8.1 Control parameters	Ingredients with workplace control parameters Contains no substances with occupational exposure limit values.
8.2 Exposure controls	<p>Appropriate engineering controls Avoid contact with skin, eyes, and clothing. Wash hands before breaks and immediately after handling the product. Change contaminated clothing.</p> <p>Personal protective equipment</p> <p>Eye/face protection Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).</p> <p>Skin protection Handle with impervious gloves. Use proper glove removal technique to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with laws and good laboratory practices. Wash and dry hands after use of product.</p> <p>Body Protection Complete suit protecting against chemicals. Protective equipment must be selected according to concentration and amount of dangerous substance at the workplace.</p> <p>Respiratory protection Required when dusts or aerosols (vapors) are generated</p> <p>Control of environmental exposure Prevent further leakage or spillage if safe to do so. Do not let product enter drains.</p>


Section 9: Physical and Chemical Properties	
9.1 Information on basic physical and chemical properties	<p>a) Appearance Form: Clear, colorless liquid</p> <p>b) Oder No data available</p> <p>c) Odor Threshold No data available</p> <p>d) pH Varies</p> <p>e) Melting point/freezing point</p>

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	No data available f) Initial boiling point and boiling range No data available g) Flash Point No data available h) Evaporation rate No data available i) Flammability (solid, gas) No data available j) Upper/lower flammability or explosive limits No data available k) Vapor pressure No data available l) Vapor density No data available m) Relative density No data available n) Water solubility Soluble in water o) Partition coefficient: n-octanol/water No data available p) Autoignition temperature No data available q) Decomposition temperature No data available r) Viscosity No data available s) Explosive properties No data available t) Oxidizing properties No data available
9.2 Other safety information	No data available

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Section 10: Stability and Reactivity	
10.1 Reactivity	No data available
10.2 Chemical Stability	The product is chemically stable under recommended storage conditions (2-8°C)
10.3 Possibility of hazardous reactions	No data available
10.4 Conditions to Avoid	No data available
10.5 Incompatible Materials	Strong oxidizing agents
10.6 Hazardous Decomposition Products	In the event of a fire: see section 5

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Section 11: Toxicological Information	
11.1 Information on toxicological effects	<p>Acute Toxicity: Lethal doses to 50% of mice (LD50's) are as low as 0.5 ng/kg depending on serotype and route of administration Botulinum neurotoxin (Types A-G) may present toxicity if ingested, inhaled or directly injected through the skin. Botulinum neurotoxins (Types A-G) are not absorbed through intact skin.</p> <p>Skin corrosion/irritation No data available</p> <p>Serious eye damage/eye irritation No data available</p> <p>Respiratory or skin sensitization No data available</p> <p>Germ cell mutagenicity No data available</p> <p>Carcinogenicity IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by NTP OSHA: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by OSHA</p> <p>Reproductive toxicity No data available</p> <p>Specific target organ toxicity – single exposure Nervous System</p> <p>Specific target organ toxicity – repeated exposure Nervous System</p> <p>Aspiration hazard No data available</p>
11.2 Additional information	<p>Symptoms may be mild to fatal beginning hours to days after exposure. Physiological changes may include nausea, vertigo, pharyngeal pain, blurred vision, constipation, and respiratory paralysis. Paralysis is typically bilateral and is descending according to the order of the cranial nerves. Lethal doses to 50% of mice (LD50's) are as low as 0.5 ng/kg depending on serotype and route of administration.</p>


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Section 12: Ecological Information	
12.1 Toxicity	No data available
12.2 Persistence and degradability	Protein substance, expect biodegradation
12.3 Bioaccumulative potential	No data available
12.4 Mobility in soil	No data available
12.5 Results of PBT and vPvB assessment	PBT/vPvB assessment not available as chemical safety assessment not required or conducted.
12.6 Other adverse effects	No data available

Section 13: Disposal Considerations	
13.1 Waste treatment methods	Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state, and federal regulations. Treat liquid waste with >0.1 % hypochlorite solution (final concentration) for 1 hour and autoclave. Autoclave solid waste and glassware.

Section 14: Transport Information	
DOT (US)	UN number: 3172 Class 6.1 Packing group: I/II Proper shipping name: Toxins, extracted from living sources, liquid, n.o.s. (Botulinum toxin from <i>Clostridium botulinum</i>)
IMDG	UN number: 3172 Class 6.1 Packing group: I/II EMS-No: F-A,S-A Proper shipping name: Toxins, extracted from living sources, liquid, n.o.s. (Botulinum toxin from <i>Clostridium botulinum</i>)
IATA	UN number: 3172 Class 6.1 Packing group: I/II Proper shipping name: Toxins, extracted from living sources, liquid, n.o.s. (Botulinum toxin from <i>Clostridium botulinum</i>)

Section 15: Regulatory Information	
US Federal Regulations	
SARA Section 302 Components	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components	This material does not contain any chemical components with known CAS numbers that exceed the threshold reporting levels established by SARA Title III, Section 313
SARA Section 311/312 Hazards	Acute Health Hazard, Chronic Health Hazard

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Section 16: Other Information	
SDS Date of Preparation/Update	The above information is believed to be correct but does not claim to be all inclusive and should be used as a guide. The information is based on our present state of knowledge and is applicable to the product regarding safety precautions. It does not guarantee the properties of the product and Metabiologics, INC and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.