

## SAFETY DATA SHEET

### 1. Product and Company Information

<b>Product name</b>	Analytical standard Anatoxin-a (synthetic)
<b>Synonym</b>	synATX-a
<b>Chemical formula</b>	C <sub>10</sub> H <sub>15</sub> NO (Anatoxin-a)
<b>Supplier</b>	Cyano Biotech GmbH, Magnusstrasse 11, D-12489 Berlin, Germany Phone: +49 30 6392 4481 Fax: +49 30 6392 4489 E-mail: <a href="mailto:info@cyano-biotech.com">info@cyano-biotech.com</a>

### 2. Hazards Identification

**Product** Anatoxin-a is a toxic compound (LD<sub>50</sub> see below). However, due to the product being a very diluted aqueous solution of Anatoxin-a, the product is not classified as toxic. Nonetheless, it should be handled with care.



**Signal word:** Attention

**Hazard statements:**

<b>H302</b>	Harmful if swallowed
<b>H312</b>	Harmful in contact with skin
<b>H317</b>	May cause an allergic skin reaction
<b>H332</b>	Harmful if inhaled
<b>H335</b>	May cause respiratory irritation

**Precautionary statements:**

<b>P101</b>	If medical advice is needed, have product container or label at hand
<b>P102</b>	Keep out of reach of children
<b>P261</b>	Avoid breathing dust/vapours
<b>P262</b>	Do not get in eyes, on skin, or on clothing
<b>P280</b>	Wear protective gloves/protective clothing/eye protection
<b>P314</b>	Get medical advice if you feel unwell

### 3. Composition / Information on Ingredients

<b>Product</b>	Solution of 10 µg/ml Anatoxin-a in filtered, deionized water with 0.01% acetic acid
<b>Ingredient name</b>	(±)Anatoxin-a (approx. 0.001% (m/v))
<b>CAS Number</b>	1219922-30-1
<b>EC Number</b>	None
<b>Formula</b>	C <sub>10</sub> H <sub>15</sub> NO
<b>Molecular weight</b>	165.232 g/mol
<b>Ingredient name</b>	Water (approx. 99,999 %)
<b>CAS Number</b>	7732-15-5
<b>EC Number</b>	231-791-2
<b>Ingredient name</b>	Acetic acid (approx. 0.01% v/v)
<b>CAS Number</b>	64-19-7

<b>EC Number</b>	200-580-7
<b>Formula</b>	C <sub>2</sub> H <sub>4</sub> O <sub>2</sub>
<b>Molecular weight</b>	60.05 g/mol
<b>4. First Aid Measures</b>	
<b>General advice</b>	Consult a physician. Show this safety data sheet to the doctor in attendance.
<b>Inhalation</b>	If inhaled, move person into fresh air. If breathing is difficult, give oxygen and call a physician.
<b>Ingestion</b>	Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call for medical help immediately.
<b>Skin Contact</b>	In case of skin contact, immediately wash skin with water and soap for 15 minutes and rinse thoroughly while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
<b>Eye Contact</b>	In case of contact, immediately rinse opened eye under running water for 15 minutes. Check for and remove any contact lenses. If symptoms persist, get medical attention.
<b>5. Fire-Fighting Measures</b>	
<b>Extinguishing media</b>	Suitable: Carbon dioxide, dry chemicals, powder or water spray. Fight larger fires with water spray or foam.
<b>Special risks</b>	Specific Hazard(s): No further relevant information available. Explosion Data: Not applicable.
<b>Special protective equipment for fire fighters</b>	In case of fire, watch out for the formation of toxic smoke and gases. Wear self-contained breathing apparatus and protective clothing if necessary to prevent contact with skin and eyes.
<b>6. Accidental Release Measures</b>	
<b>Personal precautions</b>	Evacuate area. Wear suitable protection clothes and chemical safety goggles. Avoid breathing mist.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
<b>Methods for cleaning up</b>	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite). Place in covered containers. Wash spill site after material pickup is complete.
<b>7. Handling and Storage</b>	
<b>Precautions for safe handling</b>	Thorough dedusting. Open and handle receptacle with care. Do not breathe mist. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Do not use if skin is cut or scratched. Wash thoroughly after handling.
<b>Storage</b>	Store in cold place not above -20°C (-4°F). Keep container tightly sealed in a dry place.
<b>8. Exposure Controls/Personal Protection</b>	
<b>Skin and body protection</b>	Choose body protection according to the amount and concentration of the dangerous substance at the work place. Use protective coat or clothing.
<b>Hand protection</b>	Handle with protective gloves. The glove material has to be impermeable and resistant to the product. Due to missing tests no recommendation to the glove material can be given for the product. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

<b>Eye protection</b>	Use tightly sealed chemical safety goggles.
<b>9. Physical and Chemical Properties</b>	
<b>Physical state</b>	liquid at room temperature
<b>Color</b>	clear, colorless liquid with with slight vinegar odour
<b>pH</b>	not determined
<b>Melting point</b>	not determined
<b>Boiling point</b>	not determined
<b>Flash point</b>	not applicable
<b>Ignition temperature</b>	not applicable
<b>Lower explosion limit</b>	not determined
<b>Upper explosion limit</b>	not determined
<b>Vapour pressure</b>	not determined
<b>Density</b>	not determined
<b>Water solubility</b>	miscible with water, methanol, and DMSO
<b>Partition coefficient:</b>	not applicable
<b>10. Stability and Reactivity</b>	
<b>Stability</b>	Stable for two years under recommended storage conditions.
<b>Materials to avoid</b>	Protect from acids, acid chlorides, acid anhydrides, oxidizing agents, alkali metals, reducing agents.
<b>Hazardous Decomposition Products</b>	No hazardous decomposition products are known.
<b>Hazardous Polymerization</b>	Will not occur.
<b>11. Toxicological Information</b>	
The health hazards given for Anatoxin-a in this data sheet apply to concentrated solutions. The hazards of dilute solutions may be reduced. The degree of hazard for reduced concentrations is currently not available in the literature.	
<b>Acute toxicity</b>	250 µg/kg (i.p., mouse) ((+)Anatoxin-a) 3310 mg/kg (oral, rat) (acetic acid)
<b>Acute exposure</b>	May cause skin and eye irritation. Contact with acetic acid causes irritation of the respiratory system, liquid may cause eye and skin damage; ingestion may cause burning, nausea, vomiting. In sufficient quantities, ATX-a can cause paralysis and even death. Limp paralysis leading to dyspnea, cyanosis, cardiac arrhythmia leading to death.
<b>Chronic exposure</b>	Prolonged contact with acetic acid may result in eye, lung and skin damage. No information is available on the long term exposure to ATX-a.
<b>Route of exposure</b>	Skin Contact: May cause skin irritation. Skin Absorption: May be harmful if absorbed through the skin. Eye Contact: May cause eye irritation. Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract. Ingestion: May be harmful if swallowed.
<b>Target organ information</b>	Nervous system ,skin, lung
<b>12. Ecological Information</b>	
<b>Ecotoxicological effects</b>	No further relevant information available
<b>13. Disposal Considerations</b>	
<b>Waste treatment methods</b>	Recommendation: Must not be disposed together with household garbage. Do not allow product to reach sewage system. Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all

	federal, state, and local environmental regulations.
<b>Contaminated packaging</b>	Dispose of as unused product
<b>14. Transport Information</b>	
<b>RID/ADR</b>	Non-hazardous for road transport
<b>IMDG</b>	Non-hazardous for road transport
<b>IATA</b>	Non-hazardous for road transport
<b>15. Regulatory Information</b>	
<b>Chemical safety assessment</b>	A chemical Safety Assessment has not been carried out.
<b>16. Other Information</b>	
<b>Warranty</b>	The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. 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. It does not represent any guarantee of the properties of the product. Cyano Biotech GmbH shall not be held liable for any damage resulting from handling or from contact with the above product.
<b>Disclaimer</b>	For R&D use only. Not for drug, household or other uses. Use of the product must be supervised by technically qualified individuals with experience in the handling of potentially hazardous chemicals. The hazardous compound is present in such low quantities that exact determination of the degree of hazard is not warranted and would be misleading.
<b>Last revision</b>	29 <sup>th</sup> of May 2017