

MATERIAL SAFETY DATA SHEET

This document was prepared in accordance with the (US) Hazard Communication Standard (29 CFR 1910.1200) *Revision Date September 5 2023 Version 1.4*

Section 1: Product Identification

1.1 Product Identifiers

Product Name oYo-Link® DM4
Product Catalog # AT7004

1.2 International Product Classification Harmonized Code (HS Code)

Harmonized Tariff Number 382219

Diagnostic or laboratory reagents on a backing, prepared diagnostic or laboratory reagents whether or not on a backing, whether or not put up in the form of kits (excl. for malaria, for Zika and other diseases transmitted by mosquitoes of the genus Aedes, for blood-grouping, and goods of 3006)

1.3 Recommended use of the chemical and restrictions on use

Identified uses: Laboratory chemicals, Synthesis of substances
For research purposes only. Not permitted or validated for use in humans.

1.4 Supplier Details

Company AlphaThera, Inc.

Address 3401 Grays Ferry Avenue
Building 250
Philadelphia, PA 19146-2701

Email support@alphathera.com

1.5 Emergency phone number & contact

In the event of a chemical emergency, please dial 911 in the US or your country's emergency telephone number.

Section 2: Hazard(s) Identification

GHS Classification

Acute toxicity: Oral, Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2A

Specific target organ toxicity (single exposure): Category 3 - Respiratory system

Label Elements



GHS Signal Word:

Warning

GHS Hazard Phrases

H302: Harmful if swallowed

H315: Causes skin irritation

H319: Causes serious eye irritation

H335: May cause respiratory irritation

GHS Prevention Precaution Phrases

P202: Do not handle until all safety precautions have been read and understood

P261: Avoid breathing dust, fumes, gas, mist, vapors, or spray

P262: Do not get in eyes, on skin, or on clothing

P280: Wear protective gloves, protective clothing, eye protection, and face protection

GHS Response Precaution Phrases

P301 + P330 + P331: IF SWALLOWED, rinse mouth. DO NOT induce vomiting.

P302 + P350: IF ON SKIN, gently wash with plenty of soap and water

P303 + P361 + P353: IF ON SKIN OR HAIR, remove/take off immediately all contaminated clothing. Rinse skin or hair with water/shower.

P304 + P340: IF INHALED, remove victim to fresh air and keep at rest in a position comfortable for breathing

P305 + P351 + P338: IF IN EYES, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P307 + P314: IF EXPOSED, get medical advice/attention if you feel unwell

P363: Wash contaminated clothing before reuse

Other hazards

Caution - toxicological properties of this substance have not been thoroughly tested.

oYo-Link DM4 is a small adaptor protein that is engineered to contain the photoreactive non-natural amino acid benzoyl-phenylalanine. Covalent linkage to the microtubule-targeting, cytotoxic chemical DM4 (Maytansinoid DM4, N2'-deacetyl-N2'-(4-mercapto-4-methyl-1-oxopentyl)-maytansine) presents significant safety hazards for the use of oYo-Link DM4, as detailed in this document. With the exception of DM4-containing starting material, the production of oYo-Link DM4 does not involve the use of other starting materials classified as hazardous substances.

Section 3: Composition/Information on Ingredients:

Component	CAS-No.	EC-No.	Weight %
oYo-Link DM4	-	-	3
Sodium chloride	7647-14-5	231-598-3	79
Sodium phosphate dibasic dihydrate	10028-24-7	231-448-7	13
Sodium phosphate monobasic dihydrate	13472-35-0	231-449-2	5

Section 4: First Aid Measures

Description of first-aid measures

If inhaled

After inhalation, get fresh air. Get medical attention if symptoms occur.

Skin contact

In case of skin contact, remove contaminated clothing and wash skin with soap and water for at least 15 minutes. Get medical attention if symptoms occur. Wash clothing before reuse.

Eye contact

In case of eye contact, hold eyelids apart and flush eyes with water for at least 15 min. Remove contact lenses after rinsing eyes with water for several minutes if easy to accomplish. Get medical attention if symptoms occur.

Ingestion

If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. Get medical attention. DO NOT induce vomiting unless directed to do so by medical personnel.

Section 5: Firefighting Measures

Extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special hazards arising from the substance or mixture

Oxides of phosphorus, Hydrogen chloride gas, Potassium oxides, Sodium oxides

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No information available

Section 6: Accidental Release Measures**Personal precautions, protective equipment and emergency procedures:**

Advice for non-emergency personnel: Avoid dust formation. Avoid inhalation. Use personal protective equipment. Avoid substance contact with skin, eyes and clothing.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Try to prevent the material from entering drains or water courses.

Methods and materials for containment and cleaning up

Use personal protective equipment. Prevent further leakage or spillage if safe to do so. Clean up with damp cloth and collect in a suitable container for disposal. Avoid dust formation and rinse contaminated surfaces with water to eliminate traces of material. Dispose of contaminated materials following applicable regulations.

Section 7: Handling and Storage**Instructions for Safe Handling**

Avoid formation of dust and aerosols. Avoid prolonged or repeated exposure.

This product should be handled only by those properly qualified in the handling and use of hazardous chemicals, who will take into account the fire, health and chemical hazard data given on this sheet.

Conditions for Safe Storage

Keep container tightly closed in a dry and well-ventilated space. Keep in properly labeled containers, clearly indicating the hazards of this product.

Section 8: Exposure Controls/Personal Protection**Exposure limit(s)**

Contains no substances with occupational exposure limit values.

Engineering measures

Ensure adequate ventilation.
Showers
Eyewash stations

Individual protection measures

Hygiene measures: Follow general industrial hygiene practice. Wash hands thoroughly before work breaks and at the end of workday.

Eye/face protection: Wear safety glasses tested and approved by local authorities.

Hand protection: Chemical-resistant, impervious gloves.

Other protective equipment: Long-sleeved, lightweight, protective clothing.

Respiratory protection: None under normal use conditions.

Section 9: Physical and Chemical Properties

Physical state:	Pellet
Color:	White
Odor:	No strong odor known.
Odor Threshold:	No information available.
pH:	No information available.
Melting point :	No information available.
Boiling point:	No information available.
Flash point:	No information available.
Evaporation rate:	No information available.
Flammability (solid, gas):	No information available.
Lower explosion limit:	No information available.
Upper explosion limit	No information available.
Vapor pressure:	No information available.
Relative vapor density:	No information available.
Relative density:	No information available.
Water solubility:	No information available.
Autoignition temperature:	No information available.
Decomposition temperature:	No information available.
Viscosity, dynamic:	No information available.
Explosive properties:	No information available.

Section 10: Stability and Reactivity

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No information available.

Conditions to avoid

Excessive heating. Microbial contamination.

Incompatible materials

Strong acids and bases. Strong oxidizing agents.

Hazardous decomposition products

Under normal conditions, no data available.

In the event of fire, oxides of phosphorus, hydrogen chloride gas, potassium oxides, sodium oxides. See Section 5.

Section 11: Toxicological Information

Information on toxicological effects

Acute toxicity

Component	LD50 (oral, rat/mouse)	LD50 (dermal, rat/rabbit)	LC50 (inhalation, rat/mouse)
oYo-Link DM4	No data available	No data available	No data available
Sodium chloride	No data available	> 10 g/kg (rabbit)	No data available
Sodium phosphate dibasic dihydrate	No data available	No data available	No data available
Sodium phosphate monobasic dihydrate	No data available	No data available	No data available

Skin corrosion/irritation

May cause skin irritation

Serious eye damage/eye irritation

May be irritating to eyes

Respiratory or skin sensitization

No data available

Specific target organ systemic toxicity - single exposure

No data available

Specific target organ systemic toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Germ cell mutagenicity

Component	Animal testing	Ames test	OECD Test Guideline 475
oYo-Link DM4	No data available	No data available	No data available
Sodium chloride	No mutagenic effects shown	Negative	Positive (female rat bone marrow)
Sodium phosphate dibasic dihydrate	No data available	Negative	No data available
Sodium phosphate monobasic dihydrate	No data available	No data available	No data available

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 a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Reproductive toxicity

No data available

No data available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Handle in accordance with good industrial hygiene and safety practices.

Section 12: Ecological Information:

Ecotoxicity

No data available.

Persistence and degradability

No data available.

Bioaccumulative potential

No data available.

Mobility in soil

No data available.

Section 13: Disposal Considerations

The information presented in this document only applies to the material as supplied. The hazard identification of this product based on characteristics or listings within this document may not apply if the material has been used or otherwise contaminated.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: Transport Information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

Section 15: Regulatory Information

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

This material does not contain any chemicals which are subject to the reporting requirements of SARA Title III, Section 313.

SARA 311/312 Hazards

Acute toxicity

Skin corrosion/irritation

Serious eye damage/eye irritation
Specific target organ toxicity - single exposure

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

California Proposition 65

This product does not contain any Proposition 65 chemicals.

Section 16: Other Information

Training advice: Please read the product instruction manual before use and adequately train all end-users

DISCLAIMER: This information is believed to be accurate and represents the best information currently available to us. 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.