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1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

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Product name:	MMAE
Product Catalogue Number:	120202
Brand:	MedKoo Biosciences
CAS-No:	474645-27-7
1.2 Relevant identified uses of the su	bstance or mixture and uses advised against
Identified uses:	Laboratory chemicals, Synthesis of substances.
1.3 Details of the supplier of the safe	ty data sheet
Company:	MedKoo Biosciences, Inc.
	2500 Gateway Centre Blvd. Suite 400, Morrisville, NC27560, USA
Telephone:	919-636-5577
Fax:	919-980-4831
1.4 Emergency telephone number	

For chemical emergency spill, leak, fire, exposure, or accident call CHEMTREC day or night: Within USA and Canada: 1-800-424-9300. Outside USA and Canada: +1 703-527-3887 (collect calls accepted).

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture		
Classification according to Regula	ation (EC) No 1272/2008 [GHS/CLP]	
Acute Toxicity, oral - Category 4, I	H302	
2.2 Label elements		
Pictogram		
Signal word	Warning	
Hazard statement(s)	-	
H302:	Harmful if swallowed	
Precautionary statement(s)		
P264:	Wash skin thoroughly after handling.	
P302 + P352:	IF ON SKIN: Wash with plenty of soap and water.	
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.	
P310:	Immediately call a POISON CENTER/doctor.	
P321:	Specific treatment (see supplemental first aid instructions on this label).	
P333 + P313:	If skin irritation or rash occurs: Get medical advice/ attention.	
P501:	Dispose of contents/ container to an approved waste disposal plant.	

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances	
Synonyms:	Monomethyl auristatin E; MMAE. Vedotin
Formula:	C39H67N5O7
Molecular weight:	717.98
CAS-No:	474645-27-7

Component	Classification	Concentration
MMAE	Acute Tox. 4, H302	<= 100 %

4.1 Description of first aid measures

General advice

Consult a doctor and show this safety data sheet.

If inhaled

Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.

In case of skin contact

Immediately wash skin with copious amounts of soap and water for at least 15 minutes. Remove contaminated clothing

and shoes and wash before reuse. Consult a doctor.

In case of eye contact

Flush with copious amounts of water for at least 15 minutes. Consult a doctor.

If swallowed

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. Consult a doctor.

4.2 Most important symptoms and effects, both acute and delayed

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

4.3 Indication of immediate medical attention and special treatment needed

Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

In combustion, may emit toxic fumes.

5.3 Precautions for fire-fighters

Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTIAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Do not take action without suitable protective clothing - see section 8 of SDS. Evacuate personnel to safe areas. Ensure adequate ventilation. Avoid breathing vapors, mist, dust or gas.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover spillage with suitable absorbent material. Sweep up material and place in an appropriate container. Hold all material for appropriate disposal as described under section 13 of SDS.

6.4 Reference to other sections

For required PPE see section 8. For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Use in a chemical fume hood, with air supplied by an independent system. Avoid inhalation, contact with eyes, skin and clothing. Avoid the formation of dust and aerosols. Use in a well-ventilated area. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

7.2 Conditions for safe storage, including any incompatibilities.

Store in cool, well-ventilated area. Keep away from direct sunlight. Keep container tightly sealed until ready for use. Recommended storage temperature: Store at -20° C

7.3 Specific end uses

Use in a laboratory fume hood where possible. Refer to employer's COSHH risk assessment.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls

Use in a fume hood where applicable. Ensure all engineering measures described under section 7 of SDS are in place. Ensure laboratory is equipped with a safety shower and eye wash station.

Personal protective equipment

Eve/face protection

Use appropriate safety glasses.

Skin protection

Use appropriate chemical resistant gloves (minimum requirement use standard BS EN 374:2003). Gloves should be inspected before use. Wash and dry hands thoroughly after handling.

Body protection

Wear appropriate protective clothing.

Respiratory protection

If risk assessment indicates necessary, use a suitable respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance White to off white solid Vapor pressure No data available Odor No data available Vapor density No data available Odor threshold No data available Relative density No data available Solubility(ies) pН No data available No data available Melting / freezing point No data available Partition coefficient No data available Boiling point / range No data available Auto-ignition temperature No data available Decomposition Flash point No data available No data available temperature Viscosity Evaporation rate No data available No data available Flammability (solid, gas) No data available Explosive properties No data available Upper / lower flammability or explosive No data available Oxidising properties No data available limits

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Stable under recommended transport or storage conditions. **10.2 Chemical stability** Stable under recommended storage conditions. **10.3 Possibility of hazardous reactions** Hazardous reactions will not occur under normal transport or storage conditions. Decomposition may occur on exposure to conditions or materials listed below. **10.4 Conditions to avoid** Heat, moisture. **10.5 Incompatible materials** Strong acids/alkalis, strong oxidising/reducing agents. **10.6 Hazardous decomposition products** In combustion may emit toxic fumes. No known decomposition information. **11. TOXICOLOGICAL INFORMATION 11.1 Information on toxicological effects**

Acute Toxicity No data available Skin corrosion/irritation Classification criteria are not met based on available data Serious eye damage/irritation Classification criteria are not met based on available data **Respiratory or skin sensitization** Classification criteria are not met based on available data Germ cell mutagenicity Classification criteria are not met based on available data Carcinogenicity Classification criteria are not met based on available data **Reproductive toxicity** Classification criteria are not met based on available data Specific target organ toxicity - single exposure Classification criteria are not met based on available data Specific target organ toxicity - repeated exposure Classification criteria are not met based on available data **Aspiration hazard** Classification criteria are not met based on available data Symptoms / Routes of exposure Inhalation: There may be irritation of the throat with a feeling of tightness in the chest. Ingestion: There may be irritation of the throat. Skin: There may be mild irritation at the site of contact. Eyes: There may be irritation and redness. Delayed / Immediate Effects: No known symptoms. **Additional Information RTECS** No: Not available Exposure may cause irritation of eyes, mucous membranes, upper respiratory tract and skin.

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available
12.2 Persistence and degradability
No data available
12.3 Bioaccumlative potential
No data available
12.4 Mobility in soil
No data available
12.5 Results of PBT and vPvB assessment
No data available
12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with National legislation.

Contaminated packaging

Dispose of in a regulated landfill site or other method for hazardous or toxic wastes in accordance with National legislation.

14. TRANSPORT INFORMATION

Classified according to the criteria of the UN Model Regulations as reflected in the IMDG Code, ADR, RID and IATA. **14.1 UN-Number** Does not meet the criteria for classification as hazardous for transport. **14.2 UN proper shipping name** Does not meet the criteria for classification as hazardous for transport. **14.3 Transport hazard class(es)** Does not meet the criteria for classification as hazardous for transport. **14.4 Packaging group** Does not meet the criteria for classification as hazardous for transport. **14.5 Environmental hazards** This product is not classified as environmentally hazardous according to the UN Model Regulations, nor a marine pollutant according to the IMDG Code. **14.6 Special precautions for users**

No data available

15. REGULATORY INFORMATION

This safety datasheet complies with the requirements of Regulation (EC) No. 453/2010. **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture** No data available **California Proposition 65** Not applicable **15.2 Chemical safety assessment** A Chemical Safety Assessment has not been made for this product.

16. OTHER INFORMATION

Further Information

Copyright © Medkoo Bioscience. This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislature. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists. See www.medkoo.com for additional terms and conditions of sale.

Preparation Information

MedKoo Biosciences, Inc. Product Safety – multiple Region Tel: 919-636-5577

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