

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**Aflatoxin M1**

Revision date: 16.06.2020

Product code: LS-1009

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Aflatoxin M1

**Further trade names**

(6aR-cis)-2,3,6a,9a-tetrahydro-9a-hydroxy-4-methoxycyclopenta[c]furo[3',2':4,5]furo[2,3-h]  
[1]benzopyran-1,11-dione  
4-hydroxyaflatoxin B1

Substance name: Aflatoxin M1  
CAS No: 6795-23-9  
EC No: 229-865-4

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Scientific research and development

**Uses advised against**

Do not use for private purposes (household).  
Active pharmaceutical ingredient.  
In the food industry and in pharmaceutical preparations

**1.3. Details of the supplier of the safety data sheet**

Company name: Iris Biotech GmbH  
Street: Adalbert-Zoellner-Straße 1  
Place: D-95615 Marktredwitz, Germany  
Post-office box: 568  
D-95605 Marktredwitz, Germany  
Telephone: +49 9231 97121 0      Telefax: +49 9231 97121 99  
e-mail: info@iris-biotech.de  
Contact person: Compliance Department      Telephone: +49 9231 97121 0  
e-mail: sds@iris-biotech.de  
Internet: www.iris-biotech.de  
Responsible Department: Only available during office hours.

**1.4. Emergency telephone number:** +49 (0)89 19240 (POISON CENTER Munich: 24 h)**Further Information**

Emergency telephone: 24 h (POISON CENTER Munich)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:

Carcinogenicity: Carc. 1B

Germ cell mutagenicity: Muta. 1B

Acute toxicity: Acute Tox. 1

Acute toxicity: Acute Tox. 1

Acute toxicity: Acute Tox. 1

Hazard Statements:

Fatal if inhaled.

Fatal in contact with skin.

Fatal if swallowed.

May cause genetic defects.

May cause cancer.

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**2.2. Label elements****Regulation (EC) No. 1272/2008****Signal word:** Danger**Pictograms:****Hazard statements**

- H300+H310+H330 Fatal if swallowed, in contact with skin or if inhaled.  
H340 May cause genetic defects.  
H350 May cause cancer.

**Precautionary statements**

- P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/fume/gas/mist/vapours/spray.  
P262 Do not get in eyes, on skin, or on clothing.  
P264 Wash hands thoroughly after handling.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P284 Wear respiratory protection.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.  
P330 Rinse mouth.  
P302+P352 IF ON SKIN: Wash with plenty of Water.  
P310 Immediately call a POISON CENTER/doctor.  
P361+P364 Take off immediately all contaminated clothing and wash it before reuse.  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P310 Immediately call a POISON CENTER/doctor.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/container to an approved disposal site.

**Additional advice on labelling**

Warning - substance not yet tested completely.

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.1. Substances****Chemical characterization**

(6aR-cis)-2,3,6a,9a-tetrahydro-9a-hydroxy-4-methoxycyclopenta[c]furo[3',2':4,5]furo[2,3-h]  
[1]benzopyran-1,11-dione

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#### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
6795-23-9	Aflatoxin M1			<= 100 %
	229-865-4			
	Carc. 1B, Muta. 1B, Acute Tox. 1, Acute Tox. 1, Acute Tox. 1; H350 H340 H330 H310 H300			

Full text of H and EUH statements: see section 16.

#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
6795-23-9	229-865-4	Aflatoxin M1	<= 100 %
	inhalation: ATE = 0,05 mg/l (vapours); inhalation: ATE = 0,005 mg/l (dusts or mists); dermal: ATE = 5 mg/kg; oral: ATE = 0,5 mg/kg		

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### General information

First aider: Pay attention to self-protection! Remove affected person from the danger area and lay down. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

##### After inhalation

Provide fresh air. No mouth-to-mouth or mouth-to-nose resuscitation. Use Ambu bag or ventilator. Call a physician immediately. Remove casualty to fresh air and keep warm and at rest. In case of irregular breathing or respiratory arrest provide artificial respiration.

In all cases of doubt, or when symptoms persist, seek medical advice.

##### After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Call a physician immediately. After contact with skin, wash immediately with plenty of water and soap.

In all cases of doubt, or when symptoms persist, seek medical advice.

##### After contact with eyes

After eye contact: Rinse immediately carefully and thoroughly with eye-bath or water. Consult an ophthalmologist. If product gets into the eye, keep eyelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an ophthalmologist.

##### After ingestion

Rinse mouth immediately and drink 1 glass of water. Induce vomiting when the affected person is not unconscious. Call a physician immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person or a person with cramps.

In all cases of doubt, or when symptoms persist, seek medical advice.

#### 4.2. Most important symptoms and effects, both acute and delayed

No information available.

#### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

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**Suitable extinguishing media**

Co-ordinate fire-fighting measures to the fire surroundings. Water spray. alcohol resistant foam. Dry extinguishing powder. Carbon dioxide (CO<sub>2</sub>). Sand.

**Unsuitable extinguishing media**

High power water jet.

**5.2. Special hazards arising from the substance or mixture**

Non-flammable. Thermal decomposition can lead to the escape of irritating gases and vapours. In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO).

**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

**Additional information**

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Usual measures for fire prevention.

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures****General advice**

Avoid dust formation. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment. Provide adequate ventilation. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothes. Wear personal protection equipment. In case of fire: Evacuate area.

**6.2. Environmental precautions**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

**6.3. Methods and material for containment and cleaning up****Other information**

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal. Take up mechanically, placing in appropriate containers for disposal. Avoid dust formation. Clear contaminated areas thoroughly.

**6.4. Reference to other sections**

Safe handling: see section 7  
Personal protection equipment: see section 8  
Disposal: see section 13

Treat the recovered material as prescribed in the section on waste disposal.

**SECTION 7: Handling and storage****7.1. Precautions for safe handling****Advice on safe handling**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid dust formation. Do not breathe dust. Provide adequate ventilation. Avoid dust formation. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact with skin, eyes and clothes.

**Advice on protection against fire and explosion**

Usual measures for fire prevention.

**Advice on general occupational hygiene**

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Avoid contact with skin, eyes and clothes. Provide adequate ventilation.

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**7.2. Conditions for safe storage, including any incompatibilities****Requirements for storage rooms and vessels**

Keep container tightly closed. Keep locked up. Store in a place accessible by authorized persons only.  
Provide adequate ventilation as well as local exhaust at critical locations. Keep container tightly closed in a cool, well-ventilated place.  
Handle and store contents under inert gas. Protect from moisture.  
storage temperature: -20 °C

**Hints on joint storage**

No special measures are necessary.

**Further information on storage conditions**

Protect from direct sunlight. Moisture-sensitive.

**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****Additional advice on limit values**

To date, no national critical limit values exist.

**8.2. Exposure controls****Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear eye/face protection.

**Hand protection**

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. Wear suitable gloves.

**Skin protection**

Use of protective clothing.

**Respiratory protection**

In case of inadequate ventilation wear respiratory protection. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.

**Environmental exposure controls**

Discharge into the environment must be avoided.

**SECTION 9: Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state:	solid
Colour:	yellow

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Odour: No data available  
 Odour threshold: not determined

#### Changes in the physical state

Melting point/freezing point: not determined  
 Boiling point or initial boiling point and boiling range: not determined  
 Sublimation point: not determined  
 Softening point: not determined  
 Flash point: No data available

#### Flammability

Solid/liquid: not determined  
 Gas: not applicable

#### Explosive properties

The product is not: Explosive.

Lower explosion limits: not determined  
 Upper explosion limits: not determined  
 Auto-ignition temperature: not determined

#### Self-ignition temperature

Solid: not determined  
 Gas: not applicable

Decomposition temperature: not determined

pH-Value: not determined

Water solubility: No data available

#### Solubility in other solvents

not determined

Partition coefficient n-octanol/water: not determined

Vapour pressure: not determined

Density: not determined

Relative vapour density: not determined

### 9.2. Other information

#### Information with regard to physical hazard classes

Sustaining combustion: No data available

Oxidizing properties  
 No data available

#### Other safety characteristics

Solvent content: No data available

Solid content: not determined

Evaporation rate: not determined

#### Further Information

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No data available

### 10.2. Chemical stability

Stable under recommended storage conditions.

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#### 10.3. Possibility of hazardous reactions

No data available

#### 10.4. Conditions to avoid

Protect from moisture.

Keep away from heat.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

#### 10.5. Incompatible materials

Oxidizing agents, strong.

Reducing agents, strong.

#### 10.6. Hazardous decomposition products

Thermal decomposition can lead to the escape of irritating gases and vapours.

 In case of fire may be liberated: Carbon dioxide (CO<sub>2</sub>). Carbon monoxide (CO).

#### Further information

In case of fire: See chapter 5.

### SECTION 11: Toxicological information

#### 11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

##### Toxicokinetics, metabolism and distribution

No data available

##### Acute toxicity

Fatal if swallowed.

Fatal in contact with skin.

Fatal if inhaled.

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
6795-23-9	Aflatoxin M1				
	oral	ATE 0,5 mg/kg			
	dermal	ATE 5 mg/kg			
	inhalation vapour	ATE 0,05 mg/l			
	inhalation aerosol	ATE 0,005 mg/l			

##### Irritation and corrosivity

Based on available data, the classification criteria are not met.

##### Sensitising effects

Based on available data, the classification criteria are not met.

##### Carcinogenic/mutagenic/toxic effects for reproduction

May cause genetic defects. (Aflatoxin M1)

May cause cancer. (Aflatoxin M1)

Reproductive toxicity: Based on available data, the classification criteria are not met.

IARC: 1 - Group 1: Carcinogenic to humans (Aflatoxin M1)

##### 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.

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**Specific effects in experiment on an animal**

No data available

**Additional information on tests**

Special hazards arising from the substance or mixture. Classification according to Regulation (EC) No 1272/2008 [CLP]: health hazard properties.

**Practical experience**

No data available

**Further information**

RTECS: GY1880000

Caution! To the best of our knowledge the toxicological properties of this material have not been thoroughly investigated.

Handle in accordance with good industrial hygiene and safety practice.

**SECTION 12: Ecological information****12.1. Toxicity**

No data available

**12.2. Persistence and degradability**

No data available

**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/not conducted.

**12.7. Other adverse effects**

Warning - substance not yet tested completely.

**Further information**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

**SECTION 13: Disposal considerations****13.1. Waste treatment methods****Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

Consult the appropriate local waste disposal expert about waste disposal.

Handle contaminated packages in the same way as the substance itself.

**Contaminated packaging**

Hazardous waste according to Directive 2008/98/EC (waste framework directive).

Handle contaminated packages in the same way as the substance itself.

**SECTION 14: Transport information****Land transport (ADR/RID)****14.1. UN number or ID number:**

UN 3462

**14.2. UN proper shipping name:**TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S.  
(Aflatoxin M1)**14.3. Transport hazard class(es):**

6.1

**14.4. Packing group:**

I

Hazard label:

6.1



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Classification code:	T2
Special Provisions:	210 274
Limited quantity:	0
Excepted quantity:	E5
Transport category:	1
Hazard No:	66
Tunnel restriction code:	C/E

#### Inland waterways transport (ADN)

<b>14.1. UN number or ID number:</b>	UN 3462
<b>14.2. UN proper shipping name:</b>	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S. (Aflatoxin M1)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	I
Hazard label:	6.1



Classification code:	T2
Special Provisions:	210 274 802
Limited quantity:	0
Excepted quantity:	E5

#### Marine transport (IMDG)

<b>14.1. UN number or ID number:</b>	UN 3462
<b>14.2. UN proper shipping name:</b>	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S. (Aflatoxin M1)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	I
Hazard label:	6.1



Special Provisions:	210, 274
Limited quantity:	0
Excepted quantity:	E5
EmS:	F-A, S-A

#### Air transport (ICAO-TI/IATA-DGR)

<b>14.1. UN number or ID number:</b>	UN 3462
<b>14.2. UN proper shipping name:</b>	TOXINS, EXTRACTED FROM LIVING SOURCES, SOLID, N.O.S. (Aflatoxin M1)
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	I
Hazard label:	6.1



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Special Provisions:	A3 A43
Limited quantity Passenger:	Forbidden
Passenger LQ:	Forbidden
Excepted quantity:	E5
IATA-packing instructions - Passenger:	666
IATA-max. quantity - Passenger:	5 kg
IATA-packing instructions - Cargo:	673
IATA-max. quantity - Cargo:	50 kg

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

#### 14.6. Special precautions for user

Warning: Acute Toxicity.

#### 14.7. Maritime transport in bulk according to IMO instruments

not applicable

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

##### EU regulatory information

Information according to 2012/18/EU (SEVESO III): H1 ACUTE TOXIC

##### Additional information

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

##### National regulatory information

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC). Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers. Observe employment restrictions for women of child-bearing age.

Water hazard class (D): 3 - highly hazardous to water

Skin resorption/Sensitization: Permeates easily through outer skin and causes poisoning.

#### 15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

### SECTION 16: Other information

#### Abbreviations and acronyms

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

CLP: Classification, labelling and Packaging

REACH: Registration, Evaluation and Authorization of Chemicals

GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals

UN: United Nations

CAS: Chemical Abstracts Service

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DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
(Accord européen relatif au transport international des marchandises dangereuses par voies de navigation  
intérieures)  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
IATA: International Air Transport Association  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

**Relevant H and EUH statements (number and full text)**

H300	Fatal if swallowed.
H300+H310+H330	Fatal if swallowed, in contact with skin or if inhaled.
H310	Fatal in contact with skin.
H330	Fatal if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.

**Further Information**

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.