According to Regulation (EC) No 1907/2006
According to Regulation (EC) No 2020/878

Betulin

Version number: 2
Issued: 2024-01-04
Replaces SDS: 2019-08-23

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name
Betulin

CAS number
473-98-3

EC number
207-475-5

Synonyms
Lup-20(29)-ene-3,28-diol, (3β)-

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

Relevant identified uses
Research and development.

Not suitable for use in
Not suitable for human consumption or veterinary purposes.

1.3. Details of the supplier of the safety data sheet

Supplier
Molekula Group

Address
Molekula Ltd, Lingfield Way, Darlington,
DL1 4XX Darlington
United Kingdom

Telephone
+44 (0) 3302 000 333

Email
info@molekula.com

Web site
www.molekula.com

Contact person
Kevin Banks

Email
+44 (0) 7769276927

1.4. Emergency telephone number

Poison center/Additional emergency number
0344 892 0111 - National Poisons Information Service (Newcastle Centre)

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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Classification
Specific Target Organ Toxicity — Single exposure, hazard category 2

Hazard statements
H371

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard pictograms



Signal word
Warning

Hazard statements
H371 May cause damage to organs.

Precautionary statements
P260 Do not breathe .
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P405 Store locked up.
P501 Dispose of contents/container to .
P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor.

2.3. Other hazards

No data available

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical name	CAS No. EC No. REACH No. Index No.	Concentration	Classification	H-phrase M factor acute M factor chronic	Note
Betulin	473-98-3 207-475-5 - -	100%	STOT SE 2	H371 - -	-

Molecular weight
442.72

Substance additional information
For the complete text of H- / EUH-statements mentioned in this section, see section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Get medical attention if any discomfort continues. Show this Safety Data Sheet (SDS) to medical personnel.

Inhalation
IF INHALED: Remove person to fresh air and keep comfortable for breathing. In case of persistent throat irritation or coughing: Seek medical attention and bring these instructions.

Skin contact
IF ON SKIN: Wash with plenty of water. Continue to rinse for at least 15 minutes and seek medical attention. Get medical advice/attention if you feel unwell.

Eye contact
Remove contact lenses if present. Rinse eyes with water. Continue to rinse for at least 15 minutes and seek medical attention.

Ingestion
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Get medical advice/attention if you feel unwell.

Information for doctors
First aiders/ medical personnel need to protect themselves.

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

The severity of the symptoms described will vary dependant of the concentration and the length of exposure.

Inhalation
Single exposure may cause the following adverse effects: Upper respiratory irritation. Difficulty in breathing.

Skin contact
Single exposure may cause the following adverse effects: Severe skin irritation.

Eye contact
Single exposure may cause the following adverse effects: Severe irritation.

Ingestion
Single exposure may cause the following adverse effects: Severe abdominal pain. Nausea, vomiting.

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

Treat symptomatically. No special treatment requirement.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

In case of fire: Use foam, carbon dioxide, dry powder or water fog to extinguish.

Unsuitable extinguishing media

No specific fire fighting procedure given.

5.2. Special hazards arising from the substance or mixture

Specific hazards: Combustible.
Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.
Carbon dioxide (CO2). Carbon monoxide (CO).
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3. Advice for firefighters

Special protective equipment for fire-fighters

Evacuate area. Avoid breathing gas, fume, vapours or spray. Cool containers exposed to heat with water spray and remove container, if no risk is involved.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid breathing dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Avoid contact with skin and eyes. For personal protection, see section 8.

6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Collect spillage with shovel, broom or the like and reuse, if possible. Dispose of large amounts of spillage/waste according to agreement with local authorities.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

Betulin

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Preventive handling precautions

For precautions see section 2.2. Wear protective clothing, gloves, eye and face protection. Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapours/spray. Avoid ingestion and inhalation.

General hygiene

Observe good chemical hygiene practices. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove contaminated clothing and launder thoroughly before re-use. Wash skin thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Store in a dry place. Store in a closed container. Recommended storage temperature: 2 to 8°C (35.6 to 46.4°F)

7.3. Specific end use(s)

No specific usage precautions noted.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits

TWA. 200ppm. 260mg/m3. Europe. Indicative occupational exposure limit values.
TWA. 200ppm. 266mg/m3. UK. EH40. WEL = Workplace Exposure Limit.
STEL. 250ppm. 333mg/m3. UK. EH40. WEL = Workplace Exposure Limit.

8.2. Exposure controls

Personal Protective Equipment Symbols



Eye / face protection

Wear eye protection.

Hand protection

Wear protective gloves. Recommended gloves: Nitrile.
Glove Thickness: 0.11mm
Breakthrough time: 8 hours

Always inspect gloves before use. If signs of wear and tear are noticed then the gloves should be replaced.

No specific hygiene procedures noted, but good personal hygiene practices are always advisable, especially when working with chemicals. Wash contaminated skin thoroughly after handling.

Other skin protection
Wash skin thoroughly after handling.

Respiratory protection
Provide adequate ventilation. If ventilation is insufficient, suitable respiratory protection must be provided.

Environmental exposure controls
Avoid discharge into drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state
Solid

Colour
White / off-white.

Odour
No data available

Melting point / freezing point
256 - 257 °C

Boiling point or initial boiling point and boiling range
No data available

Flammability
No data available

Lower and upper explosion limit
No data available

Flash point
No data available

Auto-ignition temperature
No data available

Decomposition temperature
No data available

pH
No data available

Kinematic viscosity
No data available

Solubility
No data available

Partition coefficient n-octanol/water
No data available

Vapour pressure
No data available

Density and/or relative density
No data available

Relative vapour density
No data available

Particle characteristics
No data available

9.2. Other information
No data available

SECTION 10: Stability and reactivity

10.1. Reactivity
There are no known reactivity hazards associated with this product.

10.2. Chemical stability
Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions
No data available

10.4. Conditions to avoid
No data available

10.5. Incompatible materials
Strong oxidising agents.

10.6. Hazardous decomposition products
See section 5.

SECTION 11: Toxicological information

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

Betulin

Product / Substance name CAS / EC no.	Dose descriptor	Value / Dose	Exposure route	Duration of exposure
Betulin 473-98-3 / 207-475-5	ATE = Acute Toxicity Estimate.	>2000 mg/kg	Oral	-
Betulin 473-98-3 / 207-475-5	ATE = Acute Toxicity Estimate.	>20 mg/l (vapours)	Inhalation.	4 hours
Betulin 473-98-3 / 207-475-5	ATE = Acute Toxicity Estimate.	>2000 mg/kg	Dermal	-

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

11.2. Information on other hazards
No data available

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
No data available

12.6. Endocrine disrupting properties
This product does not contain any known or suspected endocrine disruptors.

12.7. Other adverse effects
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Disposal considerations
Dispose of contents/container in accordance with local/regional/national/international regulations.

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SECTION 14: Transport information

14.1. UN number
Not applicable

14.2. UN proper shipping name
Not applicable

14.3. Transport hazard class(es)
Not applicable

14.4. Packing group
Not applicable

14.5. Environmental hazards
Not applicable

14.6. Special precautions for user
Not applicable

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 regulations

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.
This material safety data sheet complies with the requirements of Regulation (EU) 2020/878.

National regulations

No data available

15.2. Chemical safety assessment
No data available

SECTION 16: Other information

Phrase meaning

STOT SE 2 - Specific Target Organ Toxicity — Single exposure, hazard category 2
H371 May cause damage to organs.