

DBU

Revision date: 17.10.2018

Product code: RL-1151

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

DBU

Further trade names

1,8-Diazabicyclo[5.4.0]undec-7-ene

2,3,4,6,7,8,9,10-octahydropyrimido[1,2-A] azepine

2H, 3H, 4H, 6H, 7H, 8H, 9H, 10H-pyrimido[1,2-a]azepine

CAS No: 6674-22-2

EC No: 229-713-7

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

Chemical for synthesis.

Laboratory chemical

Manufacture of the substance

Uses advised against

Do not use for private purposes (household).

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
e-mail: info@iris-biotech.de
Contact person: Compliance Department
e-mail: sds@iris-biotech.de
Internet: www.iris-biotech.de
Responsible Department: Only available during office hours.

Telefax: +49 9231 97121 99

Telephone: +49 9231 97121 0

1.4. Emergency telephone number:

+49 (0)89 19240 (POISON CENTER Munich: 24 h)

Further Information

Emergency telephone: 24h

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****GB CLP Regulation**

Hazard categories:

Substance or mixture corrosive to metals: Met. Corr. 1

Acute toxicity: Acute Tox. 3

Skin corrosion/irritation: Skin Corr. 1B

Hazardous to the aquatic environment: Aquatic Chronic 3

Hazard Statements:

Toxic if swallowed.

Causes severe skin burns and eye damage.

May be corrosive to metals.

Harmful to aquatic life with long lasting effects.

2.2. Label elements**GB CLP Regulation****Signal word:** Danger

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Pictograms:



Hazard statements

- | | |
|------|--|
| H290 | May be corrosive to metals. |
| H301 | Toxic if swallowed. |
| H314 | Causes severe skin burns and eye damage. |
| H412 | Harmful to aquatic life with long lasting effects. |

Precautionary statements

- | | |
|----------------|--|
| P234 | Keep only in original packaging. |
| P260 | Do not breathe dust/fume/gas/mist/vapours/spray. |
| P264 | Wash hands thoroughly after handling. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. |
| P301+P330+P331 | IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. |
| P310 | Immediately call a POISON CENTER/doctor. |
| P303+P361+P353 | IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. |
| P363 | Wash contaminated clothing before reuse. |
| P304+P340 | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| P310 | Immediately call a POISON CENTER/doctor. |
| 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. |
| P390 | Absorb spillage to prevent material damage. |
| P405 | Store locked up. |
| P406 | Store in a corrosion-resistant container with a resistant inner liner. |
| P501 | Dispose of contents/container to an approved disposal site. |

Additional advice on labelling

Warning - substance not yet tested completely.

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.1. Substances

Chemical characterization

1,8-Diazabicyclo[5.4.0]undec-7-ene

 Sum formula: C₉H₁₆N₂

Molecular weight: 152,23 g/mol

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Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	GHS Classification			
6674-22-2	DBU			<= 100 %
	229-713-7			
	Met. Corr. 1, Acute Tox. 3, Skin Corr. 1B, Aquatic Chronic 3; H290 H301 H314 H412			

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	
6674-22-2	229-713-7	DBU	<= 100 %
	oral: LD50 = 215 mg/kg		

Further Information

Warning - substance not yet tested completely.

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

After inhalation

Provide fresh air. Medical treatment necessary. 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 polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary. Take off immediately all contaminated clothing. Call a physician immediately.

After contact with eyes

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

After ingestion

Rinse mouth immediately and drink plenty of water. Do NOT induce vomiting. Adverse human health effects and symptoms: Gastric perforation. Call a physician immediately. If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. Never give anything by mouth to an unconscious person or a person with cramps. If swallowed, rinse mouth with water (only if the person is conscious).

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

Coughing. shortage of breath. Risk of blindness!

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

Water spray. alcohol resistant foam. Dry extinguishing powder. Carbon dioxide (CO₂).

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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 (CO₂). Carbon monoxide (CO). Nitrogen oxides (NO_x).**5.3. Advice for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit. Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Additional information

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

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

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment. For non-emergency personnel: Do not breathe vapour/aerosol. Avoid substance contact. Provide adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For emergency responders. SECTION 8: Exposure controls/personal protection

6.2. Environmental precautions

Do not allow to enter into surface water or drains. Do not empty into drains; dispose of this material and its container in a safe way.

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

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal. Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7.2 and 10.5). Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Dispose of properly. Clean up affected area.

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

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. Do not breathe gas/fumes/vapour/spray. Observe label precautions.

Avoid contact with eyes and skin. Avoid breathing dust/fume/gas/mist/vapours/spray.

Advice on protection against fire and explosion

Fight fire with normal precautions from a reasonable distance.

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 or drink. Körperschuttmittel sind in ihrer Ausführung in Abhängigkeit von Gefahrstoffkonzentration und -menge arbeitsplatzspezifisch auszuwählen. Die Chemikalienbeständigkeit der Schuttmittel sollte mit deren Lieferanten

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abgeklärt werden. Protect skin by using skin protective cream.
Change contaminated clothing. Wash hands before breaks and after work.

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. Unsuitable container/equipment material: Metal. Keep in a cool, well-ventilated place. Keep locked up. Protect from moisture.
Sensitive to air
storage temperature: room temperature (+15°C bis +25°C)

Hints on joint storage

No special measures are necessary.

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**

Contains no substances with occupational exposure limit values.

8.2. Exposure controls**Appropriate engineering controls**

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe gas/fumes/vapour/spray. Technical measures and the application of suitable work processes have priority over personal protection equipment. Safe handling: see section 7

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

Suitable eye protection: goggles. Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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. Full contact:
Suitable material: Butyl caoutchouc (butyl rubber)
Thickness of glove material: 0,70 mm
Break through time: >480 min

Splash contact:

Suitable material: NBR (Nitrile rubber).
Thickness of glove material: 0,11 mm
Break through time: 30 min

Handling with gloves that meet the EU Directive 89/686/EEC and the standard EN 374, in a departure from this policy. 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.

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Skin protection

Wear suitable protective clothing.

Respiratory protection

In case of inadequate ventilation wear respiratory protection. Recommended Filter type: filter ABEK The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not allow to enter into surface water or drains.
 Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	liquid
Colour:	light yellow/ yellow
Odour:	amin-like, disagreeable

Test method

Changes in the physical state

Melting point/freezing point:	-70 °C
Boiling point or initial boiling point and boiling range:	261 °C @ 1.013 hPa
Flash point:	116 °C DIN 51758

Flammability

Solid/liquid:	No data available
Gas:	No data available

Explosive properties

Not classified as explosive.

Lower explosion limits:	1,1 vol. %
Upper explosion limits:	6,5 vol. %
Auto-ignition temperature:	260 °C DIN 51794

Self-ignition temperature

Solid:	No data available
Gas:	No data available

Decomposition temperature:	No data available
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Oxidizing properties

Not oxidising.

pH-Value (at 20 °C):	12,8 10 g/l
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Viscosity / dynamic: (at 20 °C)	11,76 mPa·s
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Flow time:	No data available
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Water solubility:	soluble
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Solubility in other solvents

No data available

Partition coefficient n-octanol/water:	1,38
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Vapour pressure: (at 25 °C)	0,02 hPa
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Vapour pressure: (at 37,7 °C)	7,1 hPa
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Density (at 20 °C): 1,02 g/cm³
Relative vapour density: No data available

9.2. Other information**Information with regard to physical hazard classes**

Sustaining combustion: No data available

Other safety characteristics

Solvent separation test: Partition coefficient: n-octanol/water: 1,38
(Experimental data)
Literature reference: The substance has a low potential for bioaccumulation (the substance has a log octanol water partition coefficient less than 3).

Solid content: not determined

Evaporation rate: No data available

Further Information

May be corrosive to metals.

SECTION 10: Stability and reactivity**10.1. Reactivity**

Corrosive to metals. Possibility of hazardous reactions. Forms explosive mixtures with air at elevated temperatures.

10.2. Chemical stability

Sensitive to air
Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Exothermic reaction with: Acid, Peroxides, Oxidizing agent. Violent reaction with: Acid halides. acid anhydride. Chloroform. acid.

10.4. Conditions to avoid

Heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.5. Incompatible materials

Metal. Keep away from: Acid, Oxidizing agent, Peroxides. Acid halides. acid anhydride. acid. Oxidizing agents. Chloroformic acid ethyl ester.

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 (CO₂). Carbon monoxide (CO). Nitrogen oxides (NO_x).

Further information

In case of fire: See chapter 5.

SECTION 11: Toxicological information**11.1. Information on hazard classes as defined in GB CLP Regulation****Toxicokinetics, metabolism and distribution**

No data available

Acute toxicity

Toxic if swallowed.

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
6674-22-2	DBU				
	oral	LD50 215 mg/kg	Rat.		

Irritation and corrosivity

Causes severe skin burns and eye damage.

Causes serious eye damage.

Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach., strong pain (risk of perforation!), Bloody vomiting.

Following inhalation: Mucosal irritations. Coughing. shortage of breath. Damage of respiratory tract.

After skin contact: Causes burns.

Following eye contact: Causes serious eye damage. Risk of blindness!

Sensitising effects

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

Carcinogenic/mutagenic/toxic effects for reproduction

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

In vitro mutagenicity/genotoxicity

OECD 471 (Ames test)

negative

(External SDS)

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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.

Specific effects in experiment on an animal

No data available

Practical experience

No data available

Further information

RTECS: No data available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Circulatory collapse, tachypnea, paralysis, Convulsions, Coma., necrosis of mouth and G.I. Tract, Jaundice, respiratory failure, cardiac arrest To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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

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SECTION 12: Ecological information

12.1. Toxicity

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. No data available

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
6674-22-2	DBU					
	Acute fish toxicity	LC50 100 mg/l	96 h	Leuciscus idus (golden orfe)	(External SDS)	
	Acute crustacea toxicity	EC50 50 mg/l	48 h	Daphnia pulex (water flea)	(External SDS)	
	Acute bacteria toxicity	(330 mg/l)	0 h	Pseudomonas putida	(External SDS)	

12.2. Persistence and degradability

No data available

CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
6674-22-2	DBU			
	OECD 302B/ ISO 9888/ EEC 92/69/V, C.9	<20%		(External SDS)
	Poorly eliminated from water.			
	Biochemical oxygen demand	<2 mg/g	5	(External SDS)
	Chemical oxygen demand (COD)	2230 mg/g		(External SDS)

12.3. Bioaccumulative potential

No indication of bioaccumulation potential.

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
6674-22-2	DBU	1,38

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. Discharge into the environment must be avoided.

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. Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Keep only in original packaging. Do not mix with other wastes.

Contaminated packaging

This material and its container must be disposed of as hazardous waste. Handle contaminated packages in the

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

SECTION 14: Transport information

Land transport (ADR/RID)

14.1. UN number: UN 3267
14.2. UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Classification code: C7
 Special Provisions: 274
 Limited quantity: 1 L
 Excepted quantity: E2
 Transport category: 2
 Hazard No: 80
 Tunnel restriction code: E

Inland waterways transport (ADN)

14.1. UN number: UN 3267
14.2. UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Classification code: C7
 Special Provisions: 274
 Limited quantity: 1 L
 Excepted quantity: E2

Marine transport (IMDG)

14.1. UN number: UN 3267
14.2. UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.
14.3. Transport hazard class(es): 8
14.4. Packing group: II
 Hazard label: 8



Special Provisions: 274
 Limited quantity: 1 L
 Excepted quantity: E2
 EmS: F-A, S-B
 Segregation group: alkalis

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number: UN 3267

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14.2. UN proper shipping name: CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S.

14.3. Transport hazard class(es): 8

14.4. Packing group: II

Hazard label: 8



Special Provisions: A3 A803

Limited quantity Passenger: 0.5 L

Passenger LQ: Y840

Excepted quantity: E2

IATA-packing instructions - Passenger: 851

IATA-max. quantity - Passenger: 1 L

IATA-packing instructions - Cargo: 855

IATA-max. quantity - Cargo: 30 L

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

Warning: strongly corrosive.

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

Restrictions on use (REACH, annex XVII):

Entry 3

Information according to 2012/18/EU (SEVESO III): H2 ACUTE TOXIC

Additional information

To follow: 850/2004/EC , 79/117/EEC , 689/2008/EC

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.

Water hazard class (D): 2 - obviously hazardous to water

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

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ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service

LC50: Lethal concentration, 50%

LD50: Lethal dose, 50%

Relevant H and EUH statements (number and full text)

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H412	Harmful to aquatic life with long lasting effects.

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.