

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 2 of 13

Precautionary statements

P102	Keep out of reach of children.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
106-97-8	butane			35 - 42 %
	203-448-7	601-004-00-0	01-2119474691-32	
	Flam. Gas 1; H220			
64-17-5	ethanol, ethyl alcohol			23 - 30 %
	200-578-6	603-002-00-5	01-2119457610-43	
	Flam. Liq. 2, Eye Irrit. 2; H225 H319			
74-98-6	propane			12 - 20 %
	200-827-9	601-003-00-5	01-2119486944-21	
	Flam. Gas 1; H220			
67-64-1	acetone; propan-2-one; propanone			6 - 11 %
	200-662-2	606-001-00-8	01-2119471330-49	
	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3; H225 H319 H336 EUH066			

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	
106-97-8	203-448-7	butane	35 - 42 %
		inhalation: LC50 = 658 mg/l (dusts or mists)	
64-17-5	200-578-6	ethanol, ethyl alcohol	23 - 30 %
		inhalation: LC50 = 95,6 mg/l (vapours); dermal: LD50 = > 2000 mg/kg; oral: LD50 = 10470 mg/kg	
74-98-6	200-827-9	propane	12 - 20 %
		inhalation: LC50 = > 20 mg/l (vapours)	
67-64-1	200-662-2	acetone; propan-2-one; propanone	6 - 11 %
		inhalation: LC50 = 76 mg/l (vapours); dermal: LD50 = 20000 mg/kg; oral: LD50 = 5800 mg/kg	

SECTION 4: First aid measures

4.1. Description of first aid measures

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 3 of 13

General information

First aider: Pay attention to self-protection!

After inhalation

Provide fresh air. In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

After contact with skin

Wash with plenty of water. Change contaminated clothing.

After contact with eyes

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 plenty of water. Medical treatment necessary.

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

Following inhalation: Headache. drowsiness. Dizziness.

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

Carbon dioxide (CO₂). Foam. Extinguishing powder. Atomized water.
Co-ordinate fire-fighting measures to the fire surroundings.

Unsuitable extinguishing media

High power water jet.

5.2. Special hazards arising from the substance or mixture

Combustible. Vapours may form explosive mixtures with air.
Heating causes rise in pressure with risk of bursting.

5.3. Advice for firefighters

In case of fire: Wear self-contained breathing apparatus.

Additional information

Use water spray jet to protect personnel and to cool endangered containers. 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 advice

Remove all sources of ignition. Provide adequate ventilation. Do not breathe gas/vapour/aerosol.

6.2. Environmental precautions

Do not allow uncontrolled discharge of product into the environment. Explosion hazard.

6.3. Methods and material for containment and cleaning up

Other information

Ventilate affected area.

Flammable liquids: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 4 of 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. Avoid contact with skin, eyes and clothes.

Advice on protection against fire and explosion

Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Vapours may form explosive mixtures with air.

Advice on general occupational hygiene

Change contaminated clothing. Wash hands before breaks and after work. When using do not eat or drink.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed. Keep in a cool, well-ventilated place. Keep away from sources of ignition - No smoking.

Hints on joint storage

Do not store together with: Oxidizing agents.

7.3. Specific end use(s)

Please refer to our internet website for more information: www.helling.de

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits (EH40)

CAS No	Substance	ppm	mg/m ³	fibres/ml	Category	Origin
67-64-1	Acetone	500	1210		TWA (8 h)	WEL
		1500	3620		STEL (15 min)	WEL
106-97-8	Butane	600	1450		TWA (8 h)	WEL
		750	1810		STEL (15 min)	WEL
64-17-5	Ethanol	1000	1920		TWA (8 h)	WEL

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 5 of 13

DNEL/DMEL values

CAS No	Substance	Exposure route	Effect	Value
64-17-5	ethanol, ethyl alcohol			
Consumer DNEL, long-term		oral	systemic	87 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	206 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	343 mg/kg bw/day
Consumer DNEL, acute		inhalation	local	950 mg/m ³
Consumer DNEL, long-term		inhalation	systemic	114 mg/m ³
Worker DNEL, acute		inhalation	local	1900 mg/m ³
Worker DNEL, long-term		inhalation	systemic	950 mg/m ³
67-64-1	acetone; propan-2-one; propanone			
Consumer DNEL, long-term		oral	systemic	62 mg/kg bw/day
Consumer DNEL, long-term		dermal	systemic	62 mg/kg bw/day
Worker DNEL, long-term		dermal	systemic	186 mg/kg bw/day
Worker DNEL, acute		inhalation	local	2420 mg/m ³
Consumer DNEL, long-term		inhalation	systemic	200 mg/m ³
Worker DNEL, long-term		inhalation	systemic	1210 mg/m ³

PNEC values

CAS No	Substance	Value
64-17-5	ethanol, ethyl alcohol	
Freshwater		0,96 mg/l
Marine water		0,79 mg/l
Freshwater sediment		3,6 mg/kg
Marine sediment		2,9 mg/kg
Micro-organisms in sewage treatment plants (STP)		580 mg/l
Soil		0,63 mg/kg
67-64-1	acetone; propan-2-one; propanone	
Freshwater		10,6 mg/l
Freshwater (intermittent releases)		21 mg/l
Marine water		1,06 mg/l
Freshwater sediment		30,4 mg/l
Marine sediment		3,04 mg/l
Micro-organisms in sewage treatment plants (STP)		100 mg/l
Soil		29,5 mg/l

8.2. Exposure controls



Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 6 of 13

gas/fumes/vapour/spray.

Individual protection measures, such as personal protective equipment

Eye/face protection

Wear eye/face protection.

Hand protection

Tested protective gloves are to be worn: Solvent-proof.

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.

Before using check leak tightness / impermeability.

Recommended protective gloves brand:

NBR (Nitrile rubber). Butyl rubber. FKM (fluororubber).

penetration time (maximum wearing period): > 8 h (DIN EN 374)

Protective gloves have to be replaced at the first sign of deterioration.

Unsuitable material: NR (Natural rubber (Caoutchouc), Natural latex). PVC (Polyvinyl chloride). Thick material.

Leather

Skin protection

Body protection: not required.

Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required.

Environmental exposure controls

No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state:	Aerosol	
Colour:	white	
Odour:	Alcohol	
Melting point/freezing point:		not applicable
Boiling point or initial boiling point and boiling range:		not applicable
Lower explosion limits:		1,4 g/m ³
Upper explosion limits:		10,8 g/m ³
Flash point:		not applicable
Auto-ignition temperature:		not determined
pH-Value:		not applicable
Viscosity / kinematic:		not applicable
Water solubility:		partially soluble
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:		not determined
Vapour pressure:		3100 hPa
(at 20 °C)		
Density (at 20 °C):		0,66 g/cm ³

9.2. Other information

Information with regard to physical hazard classes

Explosive properties

not explosive.

Oxidizing properties

Not oxidising.

Other safety characteristics

Solvent separation test:

not applicable

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 7 of 13

Solvent content: 20 - 25 %
 Solid content: 9,44%
 Viscosity / dynamic: not applicable

Further Information

No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No risks worthy of mention.

10.2. Chemical stability

No risks worthy of mention.

10.3. Possibility of hazardous reactions

Vapours may form explosive mixtures with air.

10.4. Conditions to avoid

Keep away from heat. Ignition hazard.

10.5. Incompatible materials

Oxidizing agents, strong.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide

SECTION 11: Toxicological information

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

Acute toxicity

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

ATEmix calculated

ATE (oral) > 2000 mg/kg; ATE (dermal) > 2000 mg/kg; ATE (inhalation gas) > 20000 ppm

CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
106-97-8	butane				
	inhalation (4 h) dust/mist	LC50 658 mg/l	Rat		
64-17-5	ethanol, ethyl alcohol				
	oral	LD50 mg/kg 10470	Rat	IUCLID	
	dermal	LD50 mg/kg > 2000	Rabbit		
	inhalation (4 h) vapour	LC50 95,6 mg/l	Rat	RTECS	
74-98-6	propane				
	inhalation (4 h) vapour	LC50 > 20 mg/l	Rat		
67-64-1	acetone; propan-2-one; propanone				
	oral	LD50 mg/kg 5800	Rat	RTECS	
	dermal	LD50 mg/kg 20000	Rabbit	IUCLID	
	inhalation (4 h) vapour	LC50 76 mg/l	Rat		

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 8 of 13

Irritation and corrosivity

Causes serious eye irritation.

Skin corrosion/irritation: 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

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

STOT-single exposure

May cause drowsiness or dizziness.

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.

11.2. Information on other hazards

Endocrine disrupting properties

see section 12

SECTION 12: Ecological information

12.1. Toxicity

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

CAS No	Chemical name					
	Aquatic toxicity	Dose	[h] [d]	Species	Source	Method
64-17-5	ethanol, ethyl alcohol					
	Acute fish toxicity	LC50 8140 mg/l	96 h	Leuciscus idus (golden orfe)		
	Acute algae toxicity	ErC50 275 mg/l	72 h	Chlorella vulgaris		
	Acute crustacea toxicity	EC50 > 10000 mg/l	48 h	Daphnia magna	IUCLID	
74-98-6	propane					
	Acute fish toxicity	LC50 > 100 mg/l	96 h			
	Acute algae toxicity	ErC50 > 100 mg/l				
	Acute crustacea toxicity	EC50 > 100 mg/l	48 h			
67-64-1	acetone; propan-2-one; propanone					
	Acute fish toxicity	LC50 5540 mg/l	96 h	Onchorhynchus mykiss		
	Acute crustacea toxicity	EC50 6100 mg/l	48 h	Daphnia magna		
	Algae toxicity	NOEC 530 mg/l	8 d	Microcystis aeruginosa		

12.2. Persistence and degradability

Product is partially biodegradable.

The insoluble part can be precipitated mechanically in suitable sewage treatment plants.

12.3. Bioaccumulative potential

Based on the n-octanol/water partition coefficient significant accumulation in organisms is not expected.

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 9 of 13

Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
106-97-8	butane	2,89
64-17-5	ethanol, ethyl alcohol	-0,31
74-98-6	propane	2,36
67-64-1	acetone; propan-2-one; propanone	-0,24

12.4. Mobility in soil

No information available.

12.5. Results of PBT and vPvB assessment

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

12.6. Endocrine disrupting properties

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

12.7. Other adverse effects

Do not empty into drains.

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.

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

Recommendation:

List of Wastes Code - residues/unused products

160504 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; gases in pressure containers (including halons) containing hazardous substances; hazardous waste

List of Wastes Code - contaminated packaging

150104 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); metallic packaging

Contaminated packaging

Water (with cleaning agent). Completely emptied packages can be recycled.

SECTION 14: Transport information**Land transport (ADR/RID)**

14.1. UN number or ID number: UN 1950
14.2. UN proper shipping name: AEROSOLS
14.3. Transport hazard class(es): 2
14.4. Packing group: -
Hazard label: 2.1



Classification code: 5F
Special Provisions: 190 327 344 625
Limited quantity: 1 L
Excepted quantity: E0

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 10 of 13

Transport category: 2
Tunnel restriction code: D

Inland waterways transport (ADN)

14.1. UN number or ID number: UN 1950
14.2. UN proper shipping name: AEROSOLS
14.3. Transport hazard class(es): 2
14.4. Packing group: -
Hazard label: 2.1



Classification code: 5F
Special Provisions: 190 327 344 625
Limited quantity: 1 L
Excepted quantity: E0

Marine transport (IMDG)

14.1. UN number or ID number: UN 1950
14.2. UN proper shipping name: AEROSOLS
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
Hazard label: 2.1



Special Provisions: 63, 190, 277, 327, 344, 381, 959
Limited quantity: 1000 mL
Excepted quantity: E0
EmS: F-D, S-U

Air transport (ICAO-TI/IATA-DGR)

14.1. UN number or ID number: UN 1950
14.2. UN proper shipping name: AEROSOLS, FLAMMABLE
14.3. Transport hazard class(es): 2.1
14.4. Packing group: -
Hazard label: 2.1



Special Provisions: A145 A167 A802
Limited quantity Passenger: 30 kg G
Passenger LQ: Y203
Excepted quantity: E0
IATA-packing instructions - Passenger: 203
IATA-max. quantity - Passenger: 75 kg
IATA-packing instructions - Cargo: 203
IATA-max. quantity - Cargo: 150 kg

14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: No

14.6. Special precautions for user

No information available.

14.7. Maritime transport in bulk according to IMO instruments

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 11 of 13

none

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 28, Entry 40, Entry 75

2004/42/EC (VOC): 90,63 % (598,158 g/l)

Marketing and use of explosives precursors (Regulation (EU) 2019/1148):

This product is regulated by Regulation (EU) 2019/1148: all suspicious transactions, and significant disappearances and thefts should be reported to the relevant national contact point.

Additional information

aerosol directive (75/324/EEC).

Safety data sheet available for professional user on request.

Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.

Do not spray on a naked flame or any incandescent material. Keep away from sources of ignition - No smoking.

Keep out of the reach of children.

In case of insufficient ventilation and/or through use, explosive/highly flammable mixtures may develop.

National regulatory information

Water hazard class (D): 1 - slightly hazardous to water

15.2. Chemical safety assessment

For the following substances of this mixture a chemical safety assessment has been carried out:

acetone; propan-2-one; propanone

SECTION 16: Other information

Changes

section 1, 16

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 12 of 13

Abbreviations and acronyms

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
DNEL: Derived No Effect Level
DMEL: Derived Minimal Effect Level
PNEC: Predicted No Effect Concentration
ATE: Acute toxicity estimate
LC50: Lethal concentration, 50%
LD50: Lethal dose, 50%
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
ADR: Accord européen sur le transport des marchandises dangereuses par Route
(European Agreement concerning the International Carriage of Dangerous Goods by Road)
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)
IMDG: International Maritime Code for Dangerous Goods
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: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).
Flam. Gas: Flammable gases
Flam. Liq: Flammable liquids
Eye Irrit: Eye irritation
STOT SE: Specific target organ toxicity - single exposure

Key literature references and sources for data

General review and adaption to regulation (EC) 2020/878

Relevant H and EUH statements (number and full text)

H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
EUH066	Repeated exposure may cause skin dryness or cracking.

Further Information

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of

Safety Data Sheet

according to Regulation (EC) No 1907/2006

NORD-TEST Entwickler U 89 Spray

Revision date: 14.12.2023

Page 13 of 13

processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)