

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**NORD-TEST Entwickler U 89 Spray**

Revision date: 31.05.2017

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

NORD-TEST Entwickler U 89 Spray

**Further trade names**Article no. (user):  
121.300.701**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Penetration test

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

Company name:	Helling GmbH	
Street:	Spoekerdamm 2	
Place:	D-25436 Heidgraben	
Telephone:	+49-4122-922-0	Telefax: +49-4122-922-201
e-mail:	info@helling.de	
Internet:	www.helling.de	

**1.4. Emergency telephone number:**GIZ Nord Göttingen +49-(0)511-19240  
(Information in German and English)**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No. 1272/2008**

Hazard categories:  
Aerosol: Aerosol 1  
Serious eye damage/eye irritation: Eye Irrit. 2  
Specific target organ toxicity - single exposure: STOT SE 3  
Hazard Statements:  
Extremely flammable aerosol.  
Pressurised container: May burst if heated.  
Causes serious eye irritation.  
May cause drowsiness or dizziness.

**2.2. Label elements****Regulation (EC) No. 1272/2008****Hazard components for labelling**ethanol, ethyl alcohol  
acetone; propan-2-one; propanone**Signal word:** Danger**Pictograms:****Hazard statements**

H222	Extremely flammable aerosol.
H229	Pressurised container: May burst if heated.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

**Precautionary statements**

P102 Keep out of reach of children.

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- 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 according to Regulation (EC) No. 1272/2008 [CLP]			
106-97-8	butane			35 - 42 %
	203-448-7	601-004-00-0	01-2119474691-32	
	Flam. Gas 1, Liquefied gas; H220 H280			
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.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

##### 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.

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**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.

**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**

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**

Ventilate affected area.

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

**6.4. Reference to other sections**

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. 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.

**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.

**Advice on storage compatibility**

Do not store together with: Oxidizing agents.

**7.3. Specific end use(s)**Please refer to our internet website for more information: [www.hellinggmbh.de](http://www.hellinggmbh.de)**SECTION 8: Exposure controls/personal protection**

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### 8.1. Control parameters

#### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	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
		-	-		STEL (15 min)	WEL

#### DNEL/DMEL values

CAS No	Substance			
DNEL type		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/m³
Consumer DNEL, long-term		inhalation	systemic	114 mg/m³
Worker DNEL, acute		inhalation	local	1900 mg/m³
Worker DNEL, long-term		inhalation	systemic	950 mg/m³
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/m³
Consumer DNEL, long-term		inhalation	systemic	200 mg/m³
Worker DNEL, long-term		inhalation	systemic	1210 mg/m³

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#### PNEC values

CAS No	Substance	
	Environmental compartment	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 gas/fumes/vapour/spray.

##### Protective and hygiene measures

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

##### 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.

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## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state: Aerosol  
 Colour: white  
 Odour: Alcohol

#### Test method

pH-Value: not applicable

#### Changes in the physical state

Melting point: not applicable

Initial boiling point and boiling range: not applicable

Flash point: not determined

Lower explosion limits: not determined

Upper explosion limits: not determined

Ignition temperature: not determined

Vapour pressure: 3100 hPa  
 (at 20 °C)

Density (at 20 °C): 0,66 g/cm<sup>3</sup>

Water solubility: partially soluble

#### Solubility in other solvents

not determined

Partition coefficient: not determined

Viscosity / dynamic: not applicable

Viscosity / kinematic: not applicable

Solvent separation test: not applicable

Solvent content: 20 - 25 %

### 9.2. Other information

Solid content: 9,44%

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

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## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity

CAS No	Chemical name					
	Exposure route	Dose	Species	Source	Method	
106-97-8	butane					
	inhalative (4 h) aerosol	LC50 658 mg/l	Rat			
64-17-5	ethanol, ethyl alcohol					
	oral	LD50 mg/kg 10470	Rat	IUCLID		
	dermal	LD50 mg/kg > 2000	Rabbit			
	inhalative (4 h) vapour	LC50 95,6 mg/l	Rat	RTECS		
74-98-6	propane					
	inhalative (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		
	inhalative (4 h) vapour	LC50 76 mg/l	Rat			

#### Irritation and corrosivity

Irritant effect on the skin: slightly irritant but not relevant for classification.

Irritant effect on the eye: Irritant.

#### Sensitising effects

No sensitizing effect known.

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

According to current knowledge not a carcinogen. According to current knowledge not mutagen. According to current knowledge not reproduction toxic.

#### STOT-repeated exposure

No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

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

#### 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 components in this formulation do not meet the criteria for classification as PBT or vPvB.

### 12.6. Other adverse effects

Do not empty into drains.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

#### Advice on disposal

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 disposal number of waste from residues/unused products



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

**Waste disposal number of 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:** UN1950  
**14.2. UN proper shipping name:** AEROSOLS  
**14.3. Transport hazard class(es):** 2  
Hazard label: 2.1



- Classification code: 5F  
Special Provisions: 190 327 344 625  
Limited quantity: 1 L  
Transport category: 2  
Tunnel restriction code: D

**Other applicable information (land transport)****Inland waterways transport (ADN)**

- 14.1. UN number:** UN1950  
**14.2. UN proper shipping name:** AEROSOLS  
**14.3. Transport hazard class(es):** 2  
Hazard label: 2.1



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

**Other applicable information (inland waterways transport)****Marine transport (IMDG)**

- 14.1. UN number:** UN1950  
**14.2. UN proper shipping name:** AEROSOLS  
**14.3. Transport hazard class(es):** 2  
**14.4. Packing group:** -  
Hazard label: 2, see SP63

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Special Provisions: 63, 190, 277, 327, 344, 959  
 Limited quantity: See SP277  
 EmS: F-D, S-U

#### Other applicable information (marine transport)

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

**14.1. UN number:** UN1950  
**14.2. UN proper shipping name:** AEROSOLS, flammable  
**14.3. Transport hazard class(es):** 2.1  
 Hazard label: 2.1



Special Provisions: A145 A167 A803  
 Limited quantity Passenger: 30 kg G  
 IATA-packing instructions - Passenger: 203  
 IATA-max. quantity - Passenger: 75 kg  
 IATA-packing instructions - Cargo: 203  
 IATA-max. quantity - Cargo: 150 kg

#### Other applicable information (air transport)

E0  
 Passenger-LQ: Y203

#### 14.5. Environmental hazards

ENVIRONMENTALLY HAZARDOUS: no

#### 14.6. Special precautions for user

No information available.

#### 14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

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 3: ethanol, ethyl alcohol  
 Entry 28: butane

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

##### 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.

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**National regulatory information**

Water contaminating class (D): 1 - slightly water contaminating

**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, 3, 8, 11, 12, 15, 16

**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.
H280	Contains gas under pressure; may explode 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 information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.

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