

# Safety Data Sheet

Item description: Test inks and pens, 28 – 72 mN/m

in accordance with REACh regulation 1907/2006/EG and 453/2010/EG

revised on: 25/09/2019, Version 1.00

## 1. Description of the mixture and the company

### 1.1 Product identifier

*Item description:* Test ink and test pens 28 – 72 mN/m, chemical preparation.

#### REACh registration number

A registration number for this mixture is not available as its contents or its usage in accordance with Article 2 of the REACh regulation (EC) no. 1907/2006 are excluded from registration, the annual tonnage does not require registration or registration is planned at a later point in time.

### 1.2 Relevant applications of the substance or mixture, and applications that are not advised

#### 1.2.1 Relevant applications

Solvent mixture for thin application on a solid surface for the purpose of measuring surface energy. No further applications intended.

#### 1.2.2 Inadvisable applications

None known.

### 1.3 Detailed information on the supplier providing the safety data sheet

dynelevel, Gässle 13, D-79588 Efringen-Kirchen

Email: info@dynelevel.de

Phone: Tel.: +49 (0)7628 / 359 42 75; Mobil: +49 (0)176 / 70 666 150

### 1.4 Emergency telephone number

Freiburg Poison Information Centre: +49 (0)761/19 24 0

Poison Information Mainz, (24 h in German and English) +49 (0)6131/19 24 0

## 2. Potential hazards

### 2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No. 1272/2008)

Eye irritation, category 2, H319

### 2.2 Labelling elements

Labelling (REGULATION (EC) No. 1272/2008)

*Danger pictograms*



#### Signal word

Caution

#### Hazard notice

H319 Causes severe eye irritation.

#### Safety notices

#### Response

P305 + P351 + P338 IN CASE OF CONTACT WITH EYES: Rinse gently with water for several minutes. Remove any contact lenses, if wearing them. Continue to rinse.

*Reduced labelling (<125 ml)*

*Danger pictograms*



#### Signal word

Caution

### 2.3 Other hazards

This mixture does not fulfil the criteria for classification as PBT or vPvB.

Further hazardous properties cannot be excluded. This product is to be handled with the usual care expect for chemicals.

## 3. Composition/ingredients

### 3.1 Substances

This product is a mixture.

### 3.2 Mixtures

	Product identifier	Percentage	Classification in accordance with Regulation (CE) N° 1272/2008 [CLP]
2-pyrrolidinone	CAS no.: 616-45-5 REACh registration number: 01-2119475471-37-xxxx	5–60%	Eye irritation, category 2, H319
<u>Mixture of solvents</u> that contain the following functional groups: Alcohol, glycol ethers and water	-	40-95%	No classification

approx. 0.1% dye.

*Substance with a community workplace exposure limit:*

(2-methoxymethylethoxy) propanol – CAS no.: 34590-94-8

## 4. First aid measures

### 4.1 Description of first aid measures

*General notices:* Remove soiled clothing immediately. In case of health problems, consult a doctor.

*After inhaling:* As an aerosol: Rinse mouth, supply fresh air and, as a precaution, consult a doctor.

*After contact with the skin:* Remove all contaminated items of clothing immediately. Wash skin with water.

*After contact with the eyes:* Rinse gently with water for several minutes. Remove any contact lenses, if wearing them. Continue to rinse.

*After swallowing:* Thoroughly rinse mouth and drink water immediately (maximum 2 glasses), consult a doctor

### 4.2 Main acute or delayed-onset symptoms and effects

Narcosis, irritant effects, dizziness, diarrhoea, headache, see also section 11.

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## 4.3 Information on emergency medical care or special treatment

In case of loss of consciousness: Call emergency doctor.

## 5. Firefighting measures

### 5.1 Extinguishing agents

*Suitable extinguishing agents:* CO<sub>2</sub>, foam, powder, water spray.

*Unsuitable extinguishing agents for safety reasons:* Water with full jet.

### 5.2 Specific hazards of the substance or mixture

Possible combustion products: Carbon monoxide, carbon dioxide, nitrogen oxide, acrolein Flammable. Vapours are heavier than air and can spread along the floor. In the event of extreme heating, explosive mixtures with air are possible. In the event of a fire, hazardous combustion gases or vapours may form. In the event of a fire, the following substances may be released: Nitrogen oxide, acrolein.

### 5.3 Notices

#### *Special protective equipment for firefighting:*

Only enter the hazard area with self-contained breathing apparatus. Avoid contact with the skin by maintaining a safe distance or wearing suitable protective clothing.

#### *Further information*

Cool the container by spraying water from a safe distance. Subdue escaping vapours with water. Do not discharge extinguishing water into the surface water or groundwater system.

## 6. Measures in case of unintentional release

### 6.1 Personal precautionary measures, protective equipment and emergency procedures:

Information for personnel not trained for emergencies: Avoid contact with the substance. Do not inhale vapour/aerosol. Ensure adequate ventilation. Clear danger zones, proceed according to emergency procedure and alert trained professionals.

Information for emergency services Protective equipment: see section 8.

### 6.2 Environmental measures:

Do not release into sewer system.

### 6.3 Methods and materials for retention and cleaning

Wipe up small quantities of leaked fluid (up to approx. 50 ml) with a cloth or (paper) towel; absorb larger quantities with a liquid-binding and neutralising material e.g. Chemizorb® or Vermiculite®. Dispose of material. Clean area.

### 6.4 Reference to other sections

Observe the safety measures outlined in section 7, 8 and 13. For disposal information, see section 13.

## 7. Handling and storage

### 7.1 Safety measures for safe handling

Observe the information on the label. Do not leave containers open. Avoid contact with the skin and eyes.

#### *Information on fire and explosion protection:*

Keep away from heat, sparks and flames. Avoid contact with oxidising agents.

#### *Information on safe handling*

Hygiene measures.

Change contaminated clothing immediately. Wash face and hands after finishing work.

### 7.2 Conditions for safe storage, including any incompatibilities

Protect against heat and direct sunlight. Store tightly sealed in a dry place between +15°C and +25°C.

Store in a place with a solvent-resistant floor or in a drip tray to protect the groundwater in the event of a leak.

### 7.3 Specific end applications

Other than the applications specified in section 1.2, there are no specific end applications.

## 8. Limitation and monitoring of exposure/personal protective equipment

### 8.1 Parameters to be monitored

#### (2-METHOXYMETHYLETHOXY) PROPANOL

Components with limit values that require monitoring in the workplace.

#### Ingredients

Basis	Value	Limit values	Comments
(2-methoxymethylethoxy) propanol (34590-94-8)			
EU ELV	Effects on the skin		Absorbed through skin
	Daily average	50 ppm 308 mg/m <sup>3</sup>	
TRGS 900	Category for short-term values		Category I: Substances with local effects that are critical to limit values or respiratory sensitisers Type of exposure: Vapour and aerosol.
	OEL:	50 ppm 310 mg/m <sup>3</sup>	Peak limit value 1 Type of exposure: Vapour and aerosol.

#### *Derived no-effect level (DNEL)*

Worker DNEL, long-term	Systemic effects	inhalation	310 mg/m <sup>3</sup>
Worker DNEL, long-term	Systemic effects	dermal	65 mg/kg body weight
Consumer DNEL, long-term	Systemic effects	inhalation	37.2 mg/m <sup>3</sup>
Consumer DNEL, long-term	Systemic effects	dermal	15 mg/kg body weight
Consumer DNEL, long-term	Systemic effects	oral	1.67 mg/kg body weight

#### *Recommended monitoring methods*

The methods used for the measurement of the workplace atmosphere must comply with the general requirements of DIN EN 482 and DIN EN 689.

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Predicted no-effect concentration (PNEC)	
PNEC freshwater	19 mg/l
PNEC freshwater sediment	70.2 mg/kg
PNEC seawater	1.9 mg/l
PNEC seawater sediment	7.02 mg/kg
PNEC periodic release into water	190 mg/l
PNEC water treatment plant	4168 mg/l
PNEC soil	2.74 mg/kg

## 2-PYRROLIDON

No workplace limits are defined for pyrrolidon.

### Derived no-effect level (DNEL)

Worker DNEL, acute	Systemic effects	dermal	277 mg/kg body weight
Worker DNEL, long-term	Systemic effects	dermal	10 mg/kg body weight
Worker DNEL, long-term	Systemic effects	inhalation	57.8 mg/m <sup>3</sup>
Consumer DNEL, acute	Systemic effects	dermal	167 mg/kg body weight
Consumer DNEL, acute	Systemic effects	oral	33.3 mg/kg body weight
Consumer DNEL, long-term	Systemic effects	dermal	6 mg/kg body weight
Consumer DNEL, long-term	Systemic effects	oral	5.2 mg/kg body weight
Consumer DNEL, long-term	Systemic effects	inhalation	17.1 mg/m <sup>3</sup>

### Predicted no-effect concentration (PNEC)

PNEC freshwater	0.5 mg/l
PNEC seawater	0.05 mg/l
PNEC periodic release into water	0.5 mg/l
PNEC freshwater sediment	0.42 mg/kg
PNEC soil	0.0612 mg/kg

### 8.2 Limitation and monitoring of exposure

#### Technical safety measures

Technical measures and appropriate work procedures should be given priority over the use of personal protective equipment. See section 7.

#### Individual safety measures

Body protection must be chosen depending on the concentration and quantity of the hazardous substance and the respective workplace. The chemical resistance of the protective equipment must be clarified with the supplier.

#### Hygiene measures

Change contaminated clothing immediately. Preventative skin protection (skin protection cream) is recommended. Wash face and hands after finishing work.

#### Eye/face protection

Wear safety glasses with side protection.

### Hand protection

Full contact:

Glove material: Polychloroprene – Glove thickness: 0.65 mm – Penetration time: > 480 min.

Splash contact:

Glove material: Natural latex – Glove thickness: 0.6 mm – Penetration time: > 120 min.

The protective gloves used must meet the specifications of the EC Directive 89/686/EWG and the associated EN374 standard.

*Respiratory protection – required during exposure to vapours/aerosols.* Recommended filter: A(-P2)

*Other protective measures – Protective clothing when handling larger quantities*

*Limitation and monitoring of environmental exposure –*

Do not release into sewer system.

## 9. Physical and chemical properties

### 9.1 Information about the basic physical and chemical properties

Form:	liquid
Colour:	red, green, blue or colourless
Smell:	unspecific,
pH value at 100 g/l H <sub>2</sub> O: (20°C)	6–9
Melting temperature:	approx. 12°C
Boiling temperature:	> 100°C
Ignition temperature:	> 200°C
Flash point:	> 80 °C
Explosion limits:	Not available
Vapour pressure: (20°C)	approx. 20 hPa
Relative vapour density:	Not available
Density:	approx. 1 g/cm <sup>3</sup>
Solubility in water: (20°C)	very soluble

### 9.2 Other information

None

## 10. Stability and reactivity

### 10.1 Reactivity

See section 10.3.

### 10.2 Chemical stability

The product is chemically stable under normal ambient conditions (room temperature).

Hygroscopic.

### 10.3 Potentially hazardous reactions

No hazardous reactions are to be expected with proper usage. The formation of explosive mixtures on contact with air is possible in the event of extreme heating. Strong reaction possible with: Oxidising agents, reducing agents, acid halides, acid anhydrides

### 10.4 Conditions to avoid

Extreme heating.

### 10.5 Incompatible materials

None known.

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## 10.6 Hazardous decomposition products

In the event of fire: see section 5.

## 11. Toxicological specifications

### 11.1 Information about toxicological effects

EXPECTED PROPERTIES BASED ON COMPONENTS OF THE PREPARATION:

#### Acute toxicity

LD 50 (oral, rat): > 3200 mg/kg. (Contains no substances of unknown toxicity).

LD 50 (dermal, rabbit): > 3000 mg/kg. (Contains no substances of unknown toxicity).

#### Irritation

Test for skin irritation (rabbit): Mild irritation.

Test for eye irritation (rabbit): Eye irritation – OECD Test Guideline 405.

Causes severe eye irritation (PYRROLIDON).

#### Sensitisation

Negative; patch test (human and guinea pig, all ingredients).

#### Genotoxicity

Bacterial mutagenicity: negative; Ames test/OECD 471 (all ingredients).

#### Further toxicological notices

After inhaling: Mild irritation of the respiratory tracts, lungs.

Mild irritation of: Skin, mucous membranes.

After absorption of larger quantities: Narcosis, vomiting, stomach ache, headache, dizziness, diarrhoea, cyanosis.

Danger of absorption via the skin.

Carcinogenicity – No information available.

Reproduction toxicity – No information available.

Teratogenicity – Information not available for all ingredients. As the homogeneous substances N-ethyl-2-pyrrolidone and N-methyl-2-pyrrolidone (which themselves are not contained) of an ingredient are classified as teratogens, pregnant women should not handle this product until the effects are fully understood.

Specific target organ toxicity – singular exposure – No information available.

Specific target organ toxicity – repeated exposure – No information available.

Aspiration hazard – No information available.

#### 2-PYRROLIDONE:

Acute oral toxicity LD50 rat: > 2,000 mg/kg – OECD Test Guideline 401.

LD50 rat: > 3,200 mg/kg – IUCLID.

Acute inhalative toxicity: LC0 rat: > 0.061 mg/l; 8 h; vapour, OECD Test Guideline 403 (maximum producible concentration).

Symptoms: Possible symptoms: Irritation of mucous membranes.

Acute dermal toxicity: LD50 rabbit: > 2,000 mg/kg – OECD Test Guideline 402.

Skin irritation: Rabbit: Result: No skin irritation – OECD Test Guideline 404.

Eye irritation: Rabbit: Result: Eye irritation – OECD Test Guideline 405.

Causes severe eye irritation.

Sensitisation: Patch test: Human: Result: negative – (IUCLID).

Sensitisation test: Mouse: Result: negative Method: OECD Test Guideline 429.

The value is specified in analogy to the following substances: 1-ethylpyrrolidine-2-on.

#### Germ cell mutagenicity – genotoxicity in vivo.

In-vivo micronucleus test, mouse, male and female, Intraperitoneal injection: Bone marrow.

Result: negative – Method: OECD Test Guideline 474.

Genotoxicity in vitro: Ames test, Salmonella typhimurium, Result: negative, (ECHA).

In vitro genomutation test on mammal cells: Result: negative – Method: OECD Test Guideline 476.

Mutagenicity (mammal cell test): Chromosomal aberration. human lymphocytes – Result: negative – Method: OECD Test Guideline 473.

Carcinogenicity: No reliable information from toxicological studies available.

Reproduction toxicity: Showed no effect on fertility in animal tests.

Teratogenicity: Showed no harmful effect on fertility in animal tests.

Specific target organ toxicity – singular exposure: No information available.

Specific target organ toxicity – repeated exposure: No information available.

Aspiration hazard: No information available.

### 11.2 Further information

As not all toxicological properties are available for all the ingredients of this mixture, further hazardous properties cannot be excluded. This mixture is to be handled with the usual care expected for chemicals.

## 12. Environmental specifications

EXPECTED PROPERTIES BASED ON COMPONENTS OF THE PREPARATION

### 12.1 Toxicity

Fish toxicity: LC<sub>50</sub> > 5000 mg/l (on Carassius auratus, Danio rerio and Pimephales promelas).

Daphnia toxicity: EC<sub>50</sub> > 800 mg/l (Daphnia Magna).

### 12.2 Persistence and degradability

Between 63% and 98% (OECD 301C, 301F, 302B,

Readily biodegradable.

### 12.3 Bioaccumulation potential

Log P(o/w): < 0.001 (estimated from the individual components, all components have an experimentally determined log P(o/w): < 0.001). No significant bioaccumulation potential is to be expected (log P(o/w) < 1) (literature).

### 12.4 Mobility in the soil

No information available.

### 12.5 Results of the PBT and vPvB evaluation

According to the specifications, the criteria for classification as PBT or vPvB are not fulfilled.

### 12.6 Other adverse effects

No data available.

#### Other ecological information

Do not allow into bodies of water, wastewater or soil. In case of improper handling and use, no ecological problems are to be expected.

#### 2-PYRROLIDONE

### 12.1 Toxicity

Toxicity to fish.

Static test LC<sub>50</sub> Danio rerio (zebra danio): > 4,600 mg/l; 96 h.

Accompanying analytics: yes, OECD Test Guideline 203.

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Toxicity to daphnia and other aquatic invertebrates.

Static test EC50 Daphnia magna: > 500 mg/l; 48 h.

Directive 67/548/EWG, Annex V, C.2.

Toxicity to algae.

Static test IC50 Desmodesmus subspicatus (green alga): > 500 mg/l; 72 h – DIN 38412.

Toxicity to bacteria: Static test EC50 Activated sludge: > 1,000 mg/l; 0.5 h – OECD Test Guideline 209.

## 12.2 Persistence and biodegradability

approx. 98%; 9 d; aerob – OECD Test Guideline 302B

easily eliminated from water.

Biochemical oxygen demand (BOD): 1,200 mg/g – (external safety data sheet).

Adsorbable organic halides (AOX): The mixture does not contain any organic halides.

## 12.3 Bioaccumulation potential

Partition coefficient: n-octanol/water: log Pow: < 0.001 (25°C) – OECD Test Guideline 107, no bioaccumulation is expected.

## 12.4 Mobility in the soil

No information available.

## 12.5 Results of the PBT and vPvB evaluation

The substance does not fulfil the criteria for PBT or vPvB in accordance with Regulation (EC) no. 1907/2006, Annex XIII.

## 12.6 Other adverse effects

Avoid releasing into the environment.

## 13. Disposal information

### Waste handling procedure

Product waste must be disposed of in accordance with Waste Framework Directive 2008/98/EC, as well as national and regional regulations. Leave chemicals in their original containers. Uncleaned containers must be treated in accordance with the product.

Please request information about return systems for chemicals and packaging from your local waste disposal company.

## 14. Transport information

14.1-14.6 No hazardous good in the sense of the transport regulations (ADR/RID, IATA, IMDG)

## 15. Legal regulations

15.1 Safety, health and environmental regulations/legislation specific to the substance or mixture

### EU regulations

Hazardous Incident Ordinance 96/82/EC.

Ordinance 96/82/EC does not apply.

Substances of very high concern (SVHC).

This product does not contain any substances of very high concern above the respective legal limit (> 0.1 % (w/w) REACH Regulation (EC) no. 1907/2006, Article 57).

### National regulations

Water hazard class 1 (mildly hazardous to water) (self-classification)

Storage class VCI 10

BG Chemie information sheet: M004 Irritant substances/corrosive substances

M050 Activities with hazardous substances

## 15.2 Chemical safety assessment

No chemical safety assessment has been performed for this product.

## 16. Other information

### Training information

The user must ensure adequate information, instructions and training.

### Other

Only for commercial users.

Dated: 25/09/2019

This information is based on the current state of our knowledge and serves to describe the product in terms of all the relevant safety precautions. It does not guarantee the properties of the described product.