

# Safety Data Sheet pursuant to Directive (EC) No. 1907/2006

Prepared on: 2021-04-30

Revised on:

Valid from: 03/2021

Version: 1

Replaces version: -

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## **Section 1: Designation of the substance or the mixture, and of the company**

### **1.1 Product identifier**

Name of substance / trade name: Test inks 50 – 62mN/m

Product number:

Ink 50: 100037603

Ink 52: 100037604

Ink 54: 100037605

Ink 56: 100037606

Ink 58: 100037607

Ink 60: 100037608

Ink 62: 100037609

### **Other designations:**

Test inks

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

#### **Relevant identified uses:**

Measuring the surface energy of components.

Materials such as: plastic, metal, glass, ceramics

#### **Uses advised against:**

Use on hot surfaces.

### **1.3 Information on the supplier who provides the Safety Data Sheet**

#### **Manufacturer / Supplier**

Diener electronic GmbH & Co. KG

#### **Address**

Nagolder Str. 61

#### **Country ID/PO code/town**

72224 Ebhausen

#### **Contact person for technical information**

Mr Christof Diener

#### **Phone / email:**

+49 74 58 – 999 31 - 542 / info@plasma.com

### **1.4 Emergency phone**

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## **Section 2: Potential hazards**

### **2.1 Classification of the substance or mixture**

Classification pursuant to Directive (EC) No. 1272/2008

Not a hazardous substance or hazardous mixture pursuant to Directive (EC) No. 1272/2008.

### **2.2 Identifying elements**

**Identifying elements pursuant to Directive (EC) No. 1272/2008**

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Not a hazardous substance or hazardous mixture pursuant to Directive (EC) No. 1272/2008.

### 2.3 Other hazards

This substance/this mixture does not contain any components in concentrations of 0.1% or higher which are classified as either Persistent, Bioaccumulative and Toxic (PBT) or very Persistent and very Bioaccumulative (vPvB).

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## Section 3: Composition/information on components

### 3.2 Mixture

**Name of substance:** Ethanol  
EC No.: 200-578-6  
CAS No.: 64-17-5  
REACH registration no.: 01-2119457610-43-xxxx

Ratio of ink 50: 7%  
Ratio of ink 52: 6%  
Ratio of ink 54: 5%  
Ratio of ink 56: 7%  
Ratio of ink 58: 5%  
Ratio of ink 60: 4%  
Ratio of ink 62: 3%

Classification pursuant to Directive (EC) No. 1272/2008:

Signal word: Danger  
GHS02, GHS07  
Flam. Liq. 2 H225  
Eye Irrit. 2 H319

(For the wording of the mentioned hazard statements, refer to Section 16)

**Name of substance:** Glycerine  
EC No.: 200-289-5  
CAS No.: 56-81-5  
REACH registration no.: There is no registration number for this substance since the substance and its use are exempt from registration, no registration of the annual tonnage is required, or registration is planned for a later point in time.

Ratio of ink 50: 48%  
Ratio of ink 52: 48%  
Ratio of ink 54: 49%  
Ratio of ink 56: 8%  
Ratio of ink 58: 8%  
Ratio of ink 60: 8%  
Ratio of ink 62: 8%

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Classification pursuant to Directive (EC) No. 1272/2008:

Not a hazardous substance or hazardous mixture pursuant to Directive (EC) No. 1272/2008.

**Name of substance: Deionized water**

EC No.: 231-791-2

CAS No.: 7732-18-5

REACH registration no.: There is no registration number for this substance since the substance and its use are exempt from registration, no registration of the annual tonnage is required, or registration is planned for a later point in time.

Ratio of ink 50: 45%

Ratio of ink 52: 46%

Ratio of ink 54: 46%

Ratio of ink 56: 85%

Ratio of ink 58: 87%

Ratio of ink 60: 88%

Ratio of ink 62: 89%

Classification pursuant to Directive (EC) No. 1272/2008:

Not a hazardous substance or hazardous mixture pursuant to Directive (EC) No. 1272/2008.

## **Section 4: First aid measures**

### **4.1 Description of the first aid measures**

#### **In case of aspiration**

Due to the vapour pressure, which is low under normal conditions, exposition by inhalation is to be expected mainly if substance is heated. In case of aspiration, provide fresh air to the affected person. In case of respiratory arrest, give artificial respiration.

#### **In case of skin contact**

Skin contact is considered the most frequent type of exposition to test inks at the workplace. Wash skin with plenty of water and soap.

#### **In case of eye contact**

As a precaution, rinse eyes with plenty of water.

#### **In case of ingestion**

Never attempt to give anything by mouth to an unconscious person. Rinse mouth with water.

### **4.2 Main acute and delayed symptoms and effects**

No data available.

### **4.3 Information on immediate medical help or special treatments**

No data available.

## **Section 5: Firefighting measures**

### **5.1 Extinguishing agents**

Suitable: Water spray jet, alcohol-resistant foam, carbon dioxide, solid extinguishing agent

Unsuitable: depending on environment

### **5.2 Special hazards posed by the substance or mixture**

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Carbon oxides. Pressure increase, risk of bursting if heated.

### 5.3 Notes for firefighting

If possible, remove the container from the hazard zone.

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## **Section 6: Accidental release measures**

### **6.1 Personal precautions, protective equipment and emergency procedures**

Use the specified personal protective equipment. See sections 8. Avoid contact with eyes and skin.

### **6.2 Environmental precautions**

Absorb spilled liquids with universal binder (e.g. diatomaceous earth, vermiculite, sand) and dispose of according to regulations.

Clean soiled items and floors.

Not hazardous to water. Prevent release into the sewers or to the surface and ground water.

### **6.3 Methods and materials for containment and cleaning up**

Absorb spilled liquids with absorptive agents, such as: sand, vermiculite or powdered limestone Place in suitable, sealed containers for disposal.

### **6.4 Reference to other Section**

Disposal: see section 13

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## **Section 7: Handling and storage**

### **7.1 Precautions for safe handling**

Do not leave bottles open. Avoid skin contact.

General hygiene:

- Do not eat, drink or smoke in areas where work is done.
- Wash your hands after using the substance.
- Remove contaminated clothing and protective equipment before entering areas where food is consumed.

For information on protective measures, refer to Section 2.2.

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

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### Information on storage conditions

Only substances of the same storage class should be stored together.

Storage of the substance or mixture together or jointly with the following substances is prohibited:

- pharmaceuticals, food or forage, including their additives;
- infectious, radioactive and explosive substances;
- gases;
- heavily oxidising substances of storage class 5.1A;

Storing of the substance or mixture together or jointly with the following substances is permitted under certain conditions only (for details, refer to TRGS 510):

- other explosive substances of storage class 4.1A;
- pyrophoric substances;
- substances which release flammable gases when in contact with water;
- oxidising substances of storage class 5.1B;
- ammonium nitrate and preparations containing ammonium nitrate.
- organic peroxides and self-reactive substances.

The substance should not be stored together or jointly with substances with which hazardous chemical reactions are possible.

Storing together or jointly with test inks of storage class 8B is harmless.

### Requirements in storage rooms and containers

Do not refill inks.

Keep containers tightly closed.

Storage at room temperature recommended.

Keep in a dry place.

Protect from overheating/warming.

Storage class (TRGS 510): 10: Flammable liquids

**Storage class: 10**

## 7.3 Specific end uses

### Industry- and sector-specific guidelines

Please refer to our Technical Data Sheet for additional information.

## Section 8: Limiting and monitoring exposure / personal protective equipment

### 8.1 Parameters to be monitored

#### Limit values for exposure at the workplace and/or biological limit values

#### Workplace limit values (Arbeitsplatzgrenzwerte, AGW) applicable in Germany

##### Name of substance: Ethanol; CAS No.: 64-17-5

Basis : TRGS 900 -  
Workplace limit values

Workplace limit value:

Shift average: 960mg/m<sup>3</sup> / 300ppm  
Short term exposure value: 1,920mg/m<sup>3</sup> / 1,000ppm

##### Name of substance: Glycerine; CAS No.: 56-81-5

Basis : TRGS 900 -  
Workplace limit values

Value : 200mg/m<sup>3</sup>

#### Relevant DNEL/DMEL/PNEC and other threshold values

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- values relevant for human health

**Name of substance: Ethanol; CAS No.: 64-17-5**

End point	Threshold value	Protection objective, exposure path	Use in	Duration of exposure
DNEL	1,900mg/m <sup>3</sup>	Human, via inhalation	Employee	Acute – systemic effects
DNEL	343 mg/kg	Human, via the skin	Employee	Chronic – systemic effects
DNEL	950mg/m <sup>3</sup>	Human, via inhalation	Employee	Chronic – systemic effects
End point	Threshold value	Environmental compartment		
PNEC	0.79mg/ cm <sup>3</sup>	Sea water		
PNEC	2.75mg/ cm <sup>3</sup>	Air		
PNEC	3.6mg/ cm <sup>3</sup>	Sweet water sediment		
PNEC	580mg/ cm <sup>3</sup>	Sewage plant		
PNEC	0.63mg/ cm <sup>3</sup>	Ground		
PNEC	0.96mg/ cm <sup>3</sup>	Sweet water		

**Name of substance: Glycerine; CAS No.: 56-81-5**

End point	Threshold value	Protection objective, exposure path	Use in	Duration of exposure
DNEL	56mg/m <sup>3</sup>	Human, via inhalation	Employee	Chronic – local effects
End point	Threshold value	Environmental compartment		
PNEC	8.85 mg/l	Water		
PNEC	0.885 mg/l	Sweet water		
PNEC	0.088 mg/l	Sea water		
PNEC	1,000 mg/l	Sewage plant		
PNEC	3.3 mg/kg	Sweet water sediment		
PNEC	0.33 mg/kg	Sea sediment		
PNEC	0.141 mg/kg	Ground		

### 8.2 Limiting and monitoring exposure

#### Suitable technical control equipment

When handling chemical agents, the usual precautions must be applied. Wash your hands before breaks and at the end of work.

#### Individual protective measures – personal protective equipment

##### Eye / face protection

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Safety eyewear with frame and side protection pursuant to EN 166. Use only eyewear tested and approved according to official standards such as NIOSH (US) or EN 166 (EU).

This recommendation is considered an advice and must be evaluated by a safety expert who is familiar with the specific situation of the intended use.

### Skin protection

Wear gloves for work. Check the gloves for intactness before putting them on. Remove them without touching the outside surface of the gloves to avoid skin contact with this product. Dispose of contaminated gloves after use in compliance with the statutory regulations and good laboratory practice. Wash and dry your hands.

The selected protective gloves must meet the specifications of the EC Directive 2016/425 and the derived standard EN 374.

### Gloves

In case of full contact / spray contact:

Glove material: NBR, nitrile rubber

Coat thickness (mm): 0.11 mm

Permeation time (min.): 480 min (permeation level: 6)

In case of solution in or mixture with other substances or of conditions deviating from those described in EN 374, contact the supplier of CE-approved gloves. This recommendation is to be seen as a piece of advice; it must be assessed by an industrial hygiene specialist and a safety engineer who know the specific situation of the designated use by the customer in question. The recommendation cannot be interpreted as approval of any specific type of designated used.

### Breathing protection

No breathing protection required.

### Limiting and monitoring environmental exposure

No specific environmental protection measures required.

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## **Section 9: Physical and chemical properties**

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

Optical appearance

- Aggregate state: Liquid  
- Colour: Red

Odour : Mild ethereal smell

Odour threshold: Not determined

pH value : 6-7

Melting point / freezing point: Not determined

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Initial boiling point and boiling range:	Approx. 100 °C
Flash point:	>60 °C
Evaporation rate:	Not determined
Flammability (solid, gaseous):	Not applicable
Upper/lower flammability or explosion limits:	Not determined
Vapour pressure:	Not determined
Vapour density:	Not determined
Relative density:	
Ink 50	1.119
Ink 52	1.122
Ink 54	1.125
Ink 56	Not determined
Ink 58	1.016
Ink 60	1.017
Ink 62	1.019
Solubility:	Soluble in water
Distribution coefficient: n-Octanol/water:	Not determined Not determined
Spontaneous ignition temperature:	Not applicable
Decomposition temperature:	Not determined
Viscosity:	Not determined
Explosive properties:	Not determined
Oxidising properties:	Not determined

### 9.2 Other data

Surface tension 50 - 62 mN/m at 20 °C

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## **Section 10: Stability and reactivity**

### **10.1 Reactivity**

No data available.

### **10.2 Chemical stability**

Under regular ambient conditions (room temperature, 1013hPa), the test ink is chemically stable.

### **10.3 Risk of hazardous reactions**

When used as intended, no hazardous reactions are to be expected.



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## 10.4 Conditions to be avoided

Heat, flames, sparks and hot surfaces

## 10.5 Incompatible materials

Strong oxidizing agents, strong acids

## 10.6 Hazardous decomposition products

Hazardous decomposition products may be generated in case of fire. – Carbon oxides

No other decomposition products – No data available

## Section 11: Toxicology

### 11.1 Information on toxicological effects

#### Acute toxicity

##### Ethanol, CAS No. 64-17-5

LD<sub>50</sub> (oral, rat): 7,060 mg/kg (published value, ECHA)

##### Glycerine, CAS No. 56-81-5

LD<sub>50</sub> (oral, rat): 12,600 mg/kg (literature value) <sup>[1]</sup>

ATE<sub>mix</sub> LD50 oral - rat

Ink 50 26,300mg/kg

Ink 52 26,000mg/kg

Ink 54 25,700mg/kg

Ink 56 155,500mg/kg

Ink 58 153,600mg/kg

Ink 60 151,800mg/kg

Ink 62 151,800mg/kg

[1] Federation Proceedings, Federation of American Societies for Experimental Biology. Vol. 4, Pg. 142, 1945

##### Glycerine, CAS No. 56-81-5

LD<sub>50</sub> (by skin, rabbit): >10,000 mg/kg (literature value) <sup>[2]</sup>

ATE<sub>mix</sub> LD50 by skin - rabbit

Ink 50 20,800mg/kg

Ink 52 20,600mg/kg

Ink 54 20,400mg/kg

Ink 56 123,400mg/kg

Ink 58 122,000mg/kg

Ink 60 120,400mg/kg

Ink 62 120,400mg/kg

[2] BIOFAX Industrial Bio-Test Laboratories, Inc., Data Sheets. Vol. 9-4/1970

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### Ethanol, CAS No. 64-17-5

LC50 (by inhalation, rat, 4h):

95,6 mg/L (published value, ECHA)

ATEmix LC50 Inhalation - rat

Ink 50 1,300mg/kg

Ink 52 1,500mg/kg

Ink 54 1,900mg/kg

Ink 56 1,400mg/kg

Ink 58 1,900mg/kg

Ink 60 2,300mg/kg

Ink 62 3,100mg/kg

### Burning/irritating effect on the skin

The mixture has not been classified. The mixture does not contain any substances classified as skin irritant.

### Severe eye damage/irritation

The mixture has not been classified. The mixture does not contain any substances classified as eye irritant.

### Sensitising of the respiratory tract/skin

The mixture has not been classified. The mixture does not contain any substances classified as sensitising.

### Germ cell mutagenicity

The mixture has not been classified. The mixture does not contain any substances classified as mutagenic.

### Carcinogenicity

The mixture has not been classified. The mixture does not contain any substances classified as carcinogenic.

### Toxicity to reproduction

The mixture has not been classified. The mixture does not contain any substances classified as toxic to reproduction.

### Specific target organ systemic toxicity with single exposure

The mixture has not been classified. The mixture contains no substances classified as specifically target organ systemic toxic with single exposure.

### Specific target organ systemic toxicity with multiple exposure

The mixture has not been classified. The mixture contains no substances classified as specifically target organ systemic toxic with multiple exposure.

### Aspiration hazard

The mixture has not been classified.

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## **Section 12: Ecological information**

### **12.1 Toxicity**

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### **Ethanol, CAS No. 64-17-5**

Toxicity to fish (LC50, 96h) 14.2 – 15.4 g/L  
(NOEC, 5d) 250 – 1,000 mg/L

Toxicity to invertebrate aquatic animals (EC50, 48h) 10 g/L  
(NOEC, 9 d) 9.6 mg/L

Toxicity to algae (EC50, 7 d) 4,431– 5,967 g/L  
(NOEC, 7 d) 280 – 1,296 mg/L

### **Glycerine, CAS No. 56-81-5**

Toxicity to fish (LC50, 96h) 54 g/L

Toxicity to invertebrate aquatic animals (EC50, 24h) 10 g/L

## **12.2 Persistence and degradability**

Biological aerobic – exposition time 2 d  
degradability Result: 95% - Readily biodegradable.  
Notes: (ECHA)

## **12.3 Bioaccumulative potential**

No data available.

## **12.4 Mobility in the soil**

No data available.

## **12.5 Results of PBT and vPvB assessment**

In accordance with the available data, the criteria for classification as PBT or vPvB are not met

## **12.6 Other adverse effects**

No information available

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## **Section 13: Disposal considerations**

### **13.1 Waste treatment methods**

Have residual volumes and non-reusable solutions disposed of by a recognized disposal company.

### **Treatment of contaminated packages**

Rinse glass bottle and dispose of with waste glass. Dispose of the rinse fluid in the same way as of the mixture. Recommended cleaning agent: water

### **Waste code according to List of Wastes Regulation (LoW)**

Discuss the exact waste code with the waste disposal contractor.

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## **Section 14: Transport information**

### **14.1 UN number**

-

### **14.2 UN proper shipping name**

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**ADR/RID**

-

**IMDG Code / ICAO-TI / IATA-DGR**

-

### 14.3 Transport hazard classes

-

### 14.4 Packing group

-

### 14.5 Environmental hazards

#### Identification of environmentally hazardous substances

ADR/RID / IMDG code / ICAO-TI / IATA-DGR:  yes /  no

Marine Pollutant:  yes /  no

### 14.6 Special precautions for user

-

### 14.7 Transport in bulk according to Appendix II of the MARPOL Convention and the IBC Code

Contamination category (X, Y or Z): -

Vessel type (1, 2 or 3): -

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## **Section 15: Regulatory information**

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

#### National laws

##### Water hazard class

WGK: 1, Slightly hazardous to water pursuant to AwSV Annex 1 No. 5

ID no. glycerine: 116

ID no. ethanol: 96

##### Solvents Regulation (31. BImSchV)

VOC ratio: 3-7%

#### Other relevant regulations

Protection measures pursuant to TRGS 500 have been complied with.

Storage class pursuant to TRGS 510: 10 (Flammable liquids)

### 15.2 Chemical safety assessment

No chemical safety assessment has been carried out for this product.

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## **Section 16: Other data**

### Revisions compared to last version

No revisions made

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## Literature references and sources for data

### Regulations

REACH Directive (EC) No. 1907/2006, last modified by Regulation (EU) 2017/1000

CLP Directive (EC) No. 1272/2008, last modified by Regulation (EU) 2017/776

### Internet

[GESTIS-Stoffdatenbank \(dguv.de\)](https://gestis-stoffdatenbank.dguv.de)

[www.baua.de](http://www.baua.de)

[www.gischem.de](http://www.gischem.de)

[www.echa.europa.eu/en/candidate-list-table](http://www.echa.europa.eu/en/candidate-list-table)

## Wording of the hazard statements and/or safety statements referred to in Sections 2 to 15

H225 Highly flammable liquid and vapour  
H319 Causes severe eye irritation

### Information on training

Working with this hazardous substance does not require any mandatory training.

Please contact Diener electronic for information on proper handling of these test inks.

## Legend

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AwSV	German Ordinance on Installations for the Handling of Substances Hazardous to Water
BImSchV	German Air Pollution Control Act
CAS	Chemical Abstracts Service
DIN	Standard by Deutsches Institut für Normung
EC	Effective Concentration
EC	European Community
EN	European Standard
IATA-DGR	International Air Transport Association-Dangerous Goods Regulations
IBC Code	International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
ICAO-TI	International Civil Aviation Organization-Technical Instructions
IMDG Code	International Maritime Code for Dangerous Goods
ISO	Standard by International Standards Organization
IUCLID	International Uniform Chemical Information Database
LC	Lethal Concentration
LD	Lethal Dose
log Kow	octanol-water partition coefficient
MARPOL	International Convention for the Prevention of Pollution from Ships
OECD	Organisation for Economic Co-operation and Development
PBT	Persistent, bioaccumulative, toxic
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
TRGS	Technical Rules for Hazardous Substances
UN	United Nations
VOC	Volatile Organic Compounds
vPvB	very persistent and very bio-accumulative
VwVwS	German Administrative Regulation Regarding Water Pollutants
WGK	Water Hazard Class

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### **Additional information**

#### **Disclaimer**

To our best knowledge, the specifications in this Safety Data Sheet correspond to the state of know-how at the time of printing. The information is intended to provide guidance on the safe handling of the product specified in this Safety Data Sheet during storage, processing, transport and disposal. The information cannot be applied to other products. Insofar as the product is mixed, blended or processed with other materials or subjected to treatment, the information in this Safety Data Sheet cannot be transferred to the new material thus produced, unless expressly stated otherwise herein.