

**SECTION 1: Identification of the substance/mixture and of the company/
undertaking**

- **1.1 Product identifier**
- Trade name: **0232 PG3 black**
- Article number: 100000000575
- **Registration number**
The ingredients of this ink meet the criteria of the Regulation 1907/2006/EC (REACH).
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
Currently no such applications are identified.
- Application of the substance / the mixture **Ball Pen Ink**
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
DOKUMENTAL GmbH & Co KG
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49 (0) 621/37702 321
Fax + 49 (0) 621/37702 391
www.dokumental.de
- **Further information obtainable from:**
Technical Service, Dr. B. Polzin
Tel.: +49-621-37702 322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- **1.4 Emergency telephone number:**
GBK Gefahrgut Büro GmbH
+49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 1 H410 Very toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Skin Sens. 1 H317 May cause an allergic skin reaction.

STOT SE 3 H335 May cause respiratory irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS05



GHS07



GHS09

- **Signal word** Danger
- **Hazard-determining components of labelling:**
C. I. Solvent Black 46
2-Phenoxyethanol
Benzyl alcohol
- **Hazard statements**
H302 Harmful if swallowed.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.

Trade name: 0232 PG3 black

H335 May cause respiratory irritation.
H410 Very toxic to aquatic life with long lasting effects.

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Precautionary statements

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
- 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.
- P321 Specific treatment (see on this label).
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 122-99-6 EINECS: 204-589-7 Reg.nr.: 01-2119488943-21	2-Phenoxyethanol ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	25-50%
CAS: 65113-55-5 EINECS: 265-449-9	C. I. Solvent Black 46 ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Skin Sens. 1, H317; STOT SE 3, H335	25-50%
CAS: 100-51-6 EINECS: 202-859-9 Reg.nr.: 01-2119492630-38	Benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2, H319	10-25%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: Call for a doctor immediately.
- 4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- 6.2 Environmental precautions:
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- 6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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Trade name: 0232 PG3 black

See Section 13 for disposal information.

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Storage class:** 10
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
If only a short-term loading of the glove material by splashes is expected, tricoted gloves with higher wearability for the better acceptance of the users are recommended.

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Nitrile rubber, NBR
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
- **Form:** Fluid

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Trade name: 0232 PG3 black

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Colour:	According to product specification
• Odour:	Product specific
• Odour threshold:	Not determined.
• Important information on protection of health and environment, and on safety.	-
• pH-value at 20 °C:	6.5
• Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	205.4 °C
• Flash point:	101 °C
• Flammability (solid, gas):	Not applicable.
• Ignition temperature:	435 °C
• Decomposition temperature:	Not determined.
• Auto-ignition temperature:	Product is not selfigniting.
• Explosive properties:	Not determined.
• Explosion limits:	
Lower:	1.3 Vol %
Upper:	13 Vol %
• Vapour pressure at 20 °C:	0.1 hPa
• Density at 20 °C:	1 g/cm ³
• Relative density	Not determined.
• Vapour density	Not determined.
• Evaporation rate	Not determined.
• Solubility in / Miscibility with water:	Not miscible or difficult to mix.
• Partition coefficient: n-octanol/water:	Not determined.
• Viscosity:	
Dynamic at 20 °C:	16,000 mPas
Kinematic:	Not determined.
• Solvent content:	
Organic solvents:	44.9 %
Solids content:	51.0 %
• 9.2 Other information	The physical and chemical properties given in Section 9.1 are rough data only, which are partially derived from the component's data of the mixture. These data are no binding product specifications.

SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity
Harmful if swallowed.

• LD/LC50 values relevant for classification:

122-99-6 2-Phenoxyethanol

Oral	LD50	2,740 mg/kg (rat)
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- Primary irritant effect:
- Skin corrosion/irritation Based on available data, the classification criteria are not met.
- Serious eye damage/irritation
Causes serious eye damage.
- Respiratory or skin sensitisation
May cause an allergic skin reaction.

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Trade name: 0232 PG3 black

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- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **STOT-single exposure**
May cause respiratory irritation.
- **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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.
Very toxic for aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
 - **European waste catalogue**
- | | |
|-----------|---|
| 08 00 00 | WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS |
| 08 01 00 | wastes from MFSU and removal of paint and varnish |
| 08 01 13* | sludges from paint or varnish containing organic solvents or other hazardous substances |
- **Uncleaned packaging:**
 - **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
 - **ADR, IMDG, IATA** UN3082
 - **14.2 UN proper shipping name**
 - **ADR** 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triarylmethane dye, black)
 - **IMDG** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triarylmethane dye, black), MARINE POLLUTANT
 - **IATA** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triarylmethane dye, black)
 - **14.3 Transport hazard class(es)**
 - **ADR**
- 

- **Class** 9 (M6) Miscellaneous dangerous substances and articles.

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Trade name: 0232 PG3 black

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· Label	9
· IMDG, IATA	
	
· Class	9 Miscellaneous dangerous substances and articles.
· Label	9
· 14.4 Packing group	III
· ADR, IMDG, IATA	III
· 14.5 Environmental hazards:	Product contains environmentally hazardous substances: triarylmethane dye, black
· Marine pollutant:	Yes
· Special marking (ADR):	Symbol (fish and tree)
· Special marking (IATA):	Symbol (fish and tree)
· 14.6 Special precautions for user	Warning: Miscellaneous dangerous substances and articles.
· Danger code (Kemler):	90
· EMS Number:	F-A,S-F
· Stowage Category	A
· 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· Transport category	3
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIARYLMETHANE DYE, BLACK), 9, III

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Directive 2012/18/EU
 - Named dangerous substances - ANNEX I None of the ingredients is listed.
 - Seveso category E1 Hazardous to the Aquatic Environment
 - Qualifying quantity (tonnes) for the application of lower-tier requirements 100 t
 - Qualifying quantity (tonnes) for the application of upper-tier requirements 200 t
 - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
 - National regulations:
 - Technical instructions (air):
- | Class | Share in % |
|-------|------------|
| NK | 25-50 |
- Waterhazard class: Water hazard class 2 (Self-assessment): hazardous for water.
 - 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
- H302 Harmful if swallowed.
- H312 Harmful in contact with skin.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H332 Harmful if inhaled.

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Trade name: 0232 PG3 black

H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

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Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
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 Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity - Category 4
Eye Dam. 1: Serious eye damage/eye irritation - Category 1
Eye Irrit. 2: Serious eye damage/eye irritation - Category 2
Skin Sens. 1: Skin sensitisation - Category 1
STOT SE 3: Specific target organ toxicity (single exposure) - Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard - Category 1
Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard - Category 1

* Data compared to the previous version altered.

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**SECTION 1: Identification of the substance/mixture and of the company/
undertaking**

- 1.1 Product identifier
- Trade name: 0604 PG3 yellow green
- Article number: 100000000717
- Registration number
The ingredients of this ink meet the criteria of the Regulation 1907/2006/EC (REACH).
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Currently no such applications are identified.
- Application of the substance / the mixture Ball Pen Ink
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
DOKUMENTAL GmbH & Co KG
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49(0)621/37702 321
Fax + 49(0)621/37702 391
www.dokumental.de
- Further information obtainable from:
Technical Service, Dr. B. Polzin
Tel.: +49-621-37702 322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- 1.4 Emergency telephone number:
GBK Gefahrgut Büro GmbH
+49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.
Skin Sens. 1 H317 May cause an allergic skin reaction.
Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
- Hazard pictograms



GHS05



GHS07

- Signal word **Danger**
- Hazard-determining components of labelling:
2-Phenoxyethanol
Phosphoric acid mono-bis-(2-ethylhexyl)-ester
C. I. Solvent Yellow 146
Benzyl alcohol
- Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
- Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

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Trade name: 0604 PG3 yellow green

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P280 Wear protective gloves / eye protection / face protection.
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.
P321 Specific treatment (see on this label).
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

• Dangerous components:

CAS: 122-99-6 EINECS: 204-589-7 Reg.nr.: 01-2119488943-21	2-Phenoxyethanol ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	25-50%
CAS: 100-51-6 EINECS: 202-859-9 Reg.nr.: 01-2119492630-38	Benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2, H319	10-25%
CAS: 94279-65-9 EC number: 304-811-3	C. I. Solvent Yellow 146 ⚠ Aquatic Chronic 2, H411; ⚠ Eye Irrit. 2, H319; Skin Sens. 1, H317	2.5-10%
CAS: 12645-31-7 EINECS: 235-741-0 Reg.nr.: 01-2119896587-13	Phosphoric acid mono-bis-(2-ethylhexyl)-ester ⚠ Skin Corr. 1C, H314	2.5-10%
CAS: 72928-60-0 EINECS: 277-086-3	C.I. Solvent Blue 38 ⚠ Acute Tox. 4, H302	2.5-10%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: Call for a doctor immediately.
- 4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- 6.2 Environmental precautions:
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- 6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

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Trade name: 0604 PG3 yellow green

See Section 13 for disposal information.

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
• **Storage:**
• **Requirements to be met by storerooms and receptacles:** No special requirements.
• **Information about storage in one common storage facility:** Not required.
• **Further information about storage conditions:** None.
• **Storage class:** 10
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

If only a short-term loading of the glove material by splashes is expected, tricoted gloves with higher wearability for the better acceptance of the users are recommended.

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Nitrile rubber, NBR

- **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**



Tightly sealed goggles

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Trade name: 0604 PG3 yellow green

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SECTION 9: Physical and chemical properties

• 9.1 Information on basic physical and chemical properties

• General Information

• Appearance:

Form:	Fluid
Colour:	According to product specification
Odour:	Specific type
Odour threshold:	Not determined.

• Important information on protection of health and environment, and on safety.

-

• pH-value at 20 °C: 6,5

• Change in condition

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	205,4 °C

• Flash point: 101 °C

• Flammability (solid, gas): Not applicable.

• Ignition temperature: 310 °C

• Decomposition temperature: Not determined.

• Auto-ignition temperature: Product is not selfigniting.

• Explosive properties: Not determined.

• Explosion limits:

Lower:	1,3 Vol %
Upper:	13 Vol %

• Vapour pressure at 20 °C: 0,1 hPa

• Density at 20 °C: 1,1 g/cm³

• Relative density: Not determined.

• Vapour density: Not determined.

• Evaporation rate: Not determined.

• Solubility in / Miscibility with water:

Not miscible or difficult to mix.

• Partition coefficient: n-octanol/water: Not determined.

• Viscosity:

Dynamic at 20 °C:	16.000 mPas
Kinematic:	Not determined.

• Solvent content:

Organic solvents: 48,9 %

Solids content: 45,6 %

• 9.2 Other information

The physical and chemical properties given in Section 9.1 are rough data only, which are partially derived from the component's data of the mixture. These data are no binding product specifications.

SECTION 10: Stability and reactivity

• 10.1 Reactivity No further relevant information available.

• 10.2 Chemical stability

• Thermal decomposition / conditions to be avoided:

No decomposition if used according to specifications.

• 10.3 Possibility of hazardous reactions No dangerous reactions known.

• 10.4 Conditions to avoid No further relevant information available.

• 10.5 Incompatible materials: No further relevant information available.

• 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

• 11.1 Information on toxicological effects

• Acute toxicity

Harmful if swallowed.

• LD/LC50 values relevant for classification:

122-99-6 2-Phenoxyethanol

Oral	LD50	2,740 mg/kg (rat)
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Trade name: 0604 PG3 yellow green

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94279-65-9 C. I. Solvent Yellow 146

Oral	LD50	2,000-5,000 mg/kg (rat)
------	------	-------------------------

- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **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.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

94279-65-9 C. I. Solvent Yellow 146

LC50 / 96h	1.6 mg/l (Daphnie)
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- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
- **Remark:** Harmful to fish
- **Additional ecological information:**
- **General notes:**
Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Danger to drinking water if even small quantities leak into the ground.
Harmful to aquatic organisms
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 13*	sludges from paint or varnish containing organic solvents or other hazardous substances

- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

ADR, ADN, IMDG, IATA not applicable

14.2 UN proper shipping name

ADR, ADN, IMDG, IATA not applicable

14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA
Class not applicable

14.4 Packing group

ADR, IMDG, IATA not applicable

14.5 Environmental hazards:

Marine pollutant: No

(Contd. on page 6)

EU

Trade name: 0604 PG3 yellow green

(Contd. of page 5)

- | | |
|---|-----------------|
| • 14.6 Special precautions for user | Not applicable. |
| • 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable. |
| • UN "Model Regulation": | not applicable |

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I None of the ingredients is listed.
- REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
- National regulations:
- Technical instructions (air):

Class	Share in %
NK	25-50
- Waterhazard class: Water hazard class 2 (Self-assessment): hazardous for water.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
 - H302 Harmful if swallowed.
 - H312 Harmful in contact with skin.
 - H314 Causes severe skin burns and eye damage.
 - H317 May cause an allergic skin reaction.
 - H319 Causes serious eye irritation.
 - H332 Harmful if inhaled.
 - H411 Toxic to aquatic life with long lasting effects.
- **Abbreviations and acronyms:**
 - AID: Règlement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 - ICAO: International Civil Aviation Organisation
 - ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
 - 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 Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (division of the American Chemical Society)
 - LCS0: Lethal concentration, 50 percent
 - LDS0: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - Acute Tox. 4: Acute toxicity - Category 4
 - Skin Corr. 1C: Skin corrosion/irritation - Category 1C
 - Skin Irrit. 2: Skin corrosion/irritation - Category 2
 - Eye Dam. 1: Serious eye damage/eye irritation - Category 1
 - Eye Irrit. 2: Serious eye damage/eye irritation - Category 2
 - Skin Sens. 1: Skin sensitisation - Category 1
 - Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard - Category 2
 - Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard - Category 3
- * Data compared to the previous version altered.

EU

**SECTION 1: Identification of the substance/mixture and of the company/
undertaking**

- 1.1 Product identifier
- Trade name: **0614 PG3 pink**
- Article number: 100000000591
- Registration number
The ingredients of this ink meet the criteria of the Regulation 1907/2006/EC (REACH).
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Currently no such applications are identified
- Application of the substance / the mixture **Ball Pen Ink**
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
DOKUMENTAL GmbH & Co KG
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49(0) 621/37702 321
Fax + 49(0) 621/37702 391
www.dokumental.de
- Further information obtainable from:
Technical Service, Dr. B. Polzin
Tel.: +49-621-37702 322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- 1.4 Emergency telephone number:
GBK Gefahrgut Büro GmbH
++49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS09 environment

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
- Hazard pictograms



GHS05



GHS07



GHS09

- Signal word **Danger**
- Hazard-determining components of labelling:
C.I. Basic Red 1
Phosphoric acid mono-bis-(2-ethylhexyl)-ester
- Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H411 Toxic to aquatic life with long lasting effects.
- Precautionary statements
P280 Wear protective gloves / eye protection / face protection.

Trade name: 0614 PG3 pink

- (Contd. of page 1)
- P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
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.
P321 Specific treatment (see on this label).
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- 2.3 Other hazards
 - Results of PBT and vPvB assessment
 - PBT: Not applicable.
 - vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

• Dangerous components:

CAS: 122-99-6 EINECS: 204-589-7	2-Phenoxyethanol ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	25-50%
CAS: 110-63-4 EINECS: 203-786-5	butane-1,4-diol ⚠ Acute Tox. 4, H302	10-25%
CAS: 989-38-8 EINECS: 213-584-9	C.I. Basic Red 1 ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302	2.5-10%
CAS: 12645-31-7 EINECS: 235-741-0	Phosphoric acid mono-bis-(2-ethylhexyl)-ester ⚠ Skin Corr. 1C, H314	≤2.5%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- General information:
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- After inhalation:
In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: Call for a doctor immediately.
- 4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- 6.2 Environmental precautions:
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- 6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

Trade name: 0614 PG3 pink

(Contd. of page 2)

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class:** 10
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

If only a short-term loading of the glove material by splashes is expected, tricoted gloves with higher wearability for the better acceptance of the users are recommended.

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Nitrile rubber, NBR
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
- **Form:** Fluid
- **Colour:** According to product specification
- **Odour:** Product specific

(Contd. on page 4)
EU

Trade name: 0614 FG3 pink

(Contd. of page 3)

• Odour threshold:	Not determined.
• Important information on protection of health and environment, and on safety.	-
• pH-value at 20 °C:	6.5
• Change in condition	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	185 °C
• Flash point:	121 °C
• Flammability (solid, gas):	Not applicable.
• Ignition temperature:	370 °C
• Decomposition temperature:	Not determined.
• Auto-ignition temperature:	Product is not selfigniting.
• Explosive properties:	Not determined.
• Explosion limits:	
Lower:	2.6 Vol %
Upper:	12.6 Vol %
• Vapour pressure at 20 °C:	0.1 hPa
• Density at 20 °C:	1.1 g/cm ³
• Relative density	Not determined.
• Vapour density	Not determined.
• Evaporation rate	Not determined.
• Solubility in / Miscibility with water:	Not miscible or difficult to mix.
• Partition coefficient: n-octanol/water:	Not determined.
• Viscosity:	
Dynamic at 20 °C:	16,000 mPas
Kinematic:	Not determined.
• Solvent content:	
Organic solvents:	51.8 %
Solids content:	42.0 %
• 9.2 Other information	The physical and chemical properties given in Section 9.1 are rough data only, which are partially derived from the component's data of the mixture. These data are no binding product specifications.

SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity
Harmful if swallowed.

LD/LC50 values relevant for classification:

122-99-6 2-Phenoxyethanol		
Oral	LD50	2,740 mg/kg (rat)
989-38-8 C.I. Basic Red 1		
Oral	LD50	301 mg/kg (rat)

- Primary irritant effect:
- Skin corrosion/irritation
Causes skin irritation.
- Serious eye damage/irritation
Causes serious eye damage.

(Contd. on page 5)

EU

Trade name: 0614 PG3 pink

(Contd. of page 4)

- Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
- Germ cell mutagenicity Based on available data, the classification criteria are not met.
- Carcinogenicity Based on available data, the classification criteria are not met.
- Reproductive toxicity Based on available data, the classification criteria are not met.
- 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.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

989-38-8 C.I. Basic Red 1

EC50 / 48h 0.1-0.5 mg/l (Daphnie)

LC50 / 96h 1-5 mg/l (Fish)

- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- 12.4 Mobility in soil No further relevant information available.

Ecotoxicological effects:

- Remark: Toxic for fish
- Additional ecological information:

General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.
Also poisonous for fish and plankton in water bodies.

12.5 Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.
- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 13*	sludges from paint or varnish containing organic solvents or other hazardous substances

Uncleaned packaging:

- Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

ADR, IMDG, IATA

UN3082

14.2 UN proper shipping name

ADR

3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (xanthene dye, red)

IMDG

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (xanthene dye, red), MARINE POLLUTANT

IATA

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (xanthene dye, red)

14.3 Transport hazard class(es)

ADR



Class

9 (M6) Miscellaneous dangerous substances and articles.

(Contd. on page 6)

EU

Trade name: 0614 PG3 pink

(Contd. of page 5)

- Label	9
- IMDG, IATA	
- Class	9 Miscellaneous dangerous substances and articles.
- Label	9
- 14.4 Packing group	
- ADR, IMDG, IATA	III
- 14.5 Environmental hazards:	Product contains environmentally hazardous substances: xanthene dye, red
- Marine pollutant:	Yes Symbol (fish and tree)
- Special marking (ADR):	Symbol (fish and tree)
- Special marking (IATA):	Symbol (fish and tree)
- 14.6 Special precautions for user	Warning: Miscellaneous dangerous substances and articles.
- Danger code (Kemler):	90
- EMS Number:	F-A,S-F
- Stowage Category	A
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code	Not applicable.
- Transport/Additional information:	
- ADR	
- Limited quantities (LQ)	5L
- Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
- Transport category	3
- Tunnel restriction code	E
- IMDG	
- Limited quantities (LQ)	5L
- Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
- UN "Model Regulation":	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (XANTHENE DYE, RED), 9, III

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Directive 2012/18/EU
 - Named dangerous substances - ANNEX I None of the ingredients is listed.
 - Seveso category E2 Hazardous to the Aquatic Environment
 - Qualifying quantity (tonnes) for the application of lower-tier requirements 200 t
 - Qualifying quantity (tonnes) for the application of upper-tier requirements 500 t
 - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
 - National regulations:
 - Technical instructions (air):
- | Class | Share in % |
|-------|------------|
| NK | 50-100 |
- Waterhazard class: Water hazard class 3 (Self-assessment): extremely hazardous for water.
 - 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
- H302 Harmful if swallowed.
- H314 Causes severe skin burns and eye damage.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.

(Contd. on page 7)

EU

Trade name: 0614 PG3 pink

(Contd. of page 6)

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

• **Abbreviations and acronyms:**

RID: Règlement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organization

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 Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

Acute Tox. 4: Acute toxicity - Category 4

Skin Corr. 1C: Skin corrosion/irritation - Category 1C

Skin Irrit. 2: Skin corrosion/irritation - Category 2

Eye Dam. 1: Serious eye damage/eye irritation - Category 1

Eye Irrit. 2: Serious eye damage/eye irritation - Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard - Category 1

Aquatic Chronic 1: Hazardous to the aquatic environment - long-term aquatic hazard - Category 1

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard - Category 2

• *** Data compared to the previous version altered.**

EU

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

- **1.1 Product identifier**
- **Trade name:** 2070 PG3 red violet
- **Article number:** 100000000530
- **Registration number**
The ingredients of this ink have been pre-registered according to 1907/2006/EC (REACH)
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
Currently no such applications are identified
- **Application of the substance / the mixture** Ball Pen Ink
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
DOKUMENTAL GmbH & Co KG Schreibfarben
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49(0)621/5402321
Fax + 49(0)621/5402391
www.dokumental.de
- **Further information obtainable from:**
Technical Service, Dr. B. Polzin
Tel.: +49-621-5402322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- **1.4 Emergency telephone number:**
GBK Gefahrgut Büro GmbH
++49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard-determining components of labelling:**
C. I. Solvent Red 49
Oleoylsarcosinic acid
- **Hazard statements**
H315 Causes skin irritation.
H318 Causes serious eye damage.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P264 Wash thoroughly after handling.
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.
P321 Specific treatment (see on this label).
P332+P313 If skin irritation occurs: Get medical advice/attention.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

(Contd. on page 2)

Trade name: 2070 PG3 red violet

(Contd. of page 1)

• **vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
Mixture of the following substances, containing non-hazardous substances and colouring agents.
- **Description:** Mixture of substances listed below with nonhazardous additions.

• Dangerous components:

CAS: 122-99-6 EINECS: 204-589-7	2-Phenoxyethanol ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	10-25%
CAS: 107-41-5 EINECS: 203-489-0	2-methylpentane-2,4-diol ⚠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	10-25%
CAS: 509-34-2 EINECS: 208-096-8	C. I. Solvent Red 49 ⚠ Eye Dam. 1, H318; ⚠ Acute Tox. 4, H302; Skin Irrit. 2, H315; STOT SE 3, H335	2,5-10%
CAS: 110-25-8 EINECS: 203-749-3	Oleoylsarcosinic acid ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H332; Skin Irrit. 2, H315	2,5-10%
CAS: 84281-86-7 EINECS: 282-630-8	C. I. Solvent Violet 8 ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319; Aquatic Chronic 4, H413	≤ 2,5%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **After inhalation:**
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:** If symptoms persist consult doctor.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.

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Trade name: 2070 PG3 red violet

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- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities:** No further data; see item 7.
- 8.1 Control parameters**
- Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information:** The lists valid during the making were used as basis.
- 8.2 Exposure controls**
- Personal protective equipment:**
- General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties**
- General Information**
- Appearance:**

Form:	Fluid
Colour:	According to product specification
- Odour:** Specific type
- Odour threshold:** Not determined.
- Important information on protection of health and environment, and on safety.**

-	-
-	-
- pH-value at 20 °C:** 6,3
- Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	185 °C
- Flash point:** 94 °C
- Flammability (solid, gaseous):** Not applicable.
- Ignition temperature:** 260 °C

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Trade name: 2070 PG3 red violet

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· Decomposition temperature:	Not determined.
· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	1,0 Vol %
Upper:	12,6 Vol %
· Vapour pressure at 20 °C:	0,1 hPa
· Density at 20 °C:	1,1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C:	16000 mPas
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	50,5 %
Solids content:	44,0 %
· 9.2 Other information	The physical and chemical properties given in Section 9.1 are rough data only, which are partially derived from the component's data of the mixture. These data are no binding product specifications.

SECTION 10: Stability and reactivity

- 10.1 Reactivity
- 10.2 Chemical stability
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity

- **LD/LC50 values relevant for classification:**

122-99-6 2-Phenoxyethanol

Oral	LD50	2740 mg/kg (rat)
------	------	------------------

509-34-2 C. I. Solvent Red 49

Oral	LD50	1830 mg/kg (rat)
------	------	------------------

110-25-8 Oleoylsarcosinic acid

Oral	LD50	9200 mg/kg (rat)
------	------	------------------

84281-86-7 C. I. Solvent Violet 8

Oral	LD50	700 mg/kg (rat)
------	------	-----------------

- **Primary irritant effect:**
- **Skin corrosion/irritation** Irritant to skin and mucous membranes.
- **Serious eye damage/irritation** Strong irritant with the danger of severe eye injury.
- **Respiratory or skin sensitisation** No sensitising effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Irritant

SECTION 12: Ecological information

- 12.1 Toxicity
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.

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Trade name: 2070 PG3 red violet

(Contd. of page 4)

- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
 - **Recommendation**
 Must not be disposed together with household garbage. Do not allow product to reach sewage system.
 - **European waste catalogue**
- | | |
|-----------|---|
| 08 00 00 | WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS |
| 08 01 00 | wastes from MFSU and removal of paint and varnish |
| 08 01 13* | sludges from paint or varnish containing organic solvents or other dangerous substances |
- **Uncleaned packaging:**
 - **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

- **14.1 UN-Number**
- **ADR, ADN, IMDG, IATA** Void
- **14.2 UN proper shipping name**
- **ADR, ADN, IMDG, IATA** Void
- **14.3 Transport hazard class(es)**
- **ADR, ADN, IMDG, IATA**
- **Class** Void
- **14.4 Packing group**
- **ADR, IMDG, IATA** Void
- **14.5 Environmental hazards:**
- **Marine pollutant:** No
- **14.6 Special precautions for user** Not applicable.
- **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.
- **UN "Model Regulation":** -

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
 - **Directive 2012/18/EU**
 - **Named dangerous substances - ANNEX I** None of the ingredients is listed.
 - **National regulations:**
 - **Technical instructions (air):**
- | Class | Share in % |
|-------|------------|
| NK | 50-100 |
- **Waterhazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
 - **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Relevant phrases**
 H302 Harmful if swallowed.
 H315 Causes skin irritation.

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Trade name: 2070 PG3 red violet

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H318 Causes serious eye damage.

H319 Causes serious eye irritation.

H332 Harmful if inhaled.

H335 May cause respiratory irritation.

H400 Very toxic to aquatic life.

H413 May cause long lasting harmful effects to aquatic life.

• **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

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 Harmonised System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

Acute Tox. 4: Acute toxicity, Hazard Category 4

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1

Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

STOT SE 3: Specific target organ toxicity - Single exposure, Hazard Category 3

Aquatic Acute 1: Hazardous to the aquatic environment - Acute Hazard, Category 1

Aquatic Chronic 4: Hazardous to the aquatic environment - Chronic Hazard, Category 4

• *** Data compared to the previous version altered.**

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

- 1.1 Product identifier
- Trade name: **M 404 PG3 green**
- Article number: 100000000499
- Registration number
The ingredients of this ink meet the criteria of the Regulation 1907/2006/EC (REACH).
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Currently no such applications are identified.
- Application of the substance / the mixture Ball Pen Ink
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
DOKUMENTAL GmbH & Co KG
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49(0) 621/37702 321
Fax + 49(0) 621/37702 391
www.dokumental.de
- Further information obtainable from:
Technical Service, Dr. B. Polzin
Tel.: +49-621-37702 322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- 1.4 Emergency telephone number:
GBK Gefahrgut Büro GmbH
+49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
- Hazard pictograms



GHS05



GHS07

- Signal word **Danger**
- Hazard-determining components of labelling:
Oleoylsarcosinic acid
C.I. Solvent Yellow 82
C.I. Solvent Blue 4 < 0,1% Michler's Ketone
- Hazard statements
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
H412 Harmful to aquatic life with long lasting effects.
- Precautionary statements
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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/-

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Trade name: M 404 PG3 green

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P321 Specific treatment (see on this label).
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

• Dangerous components:

CAS: 122-99-6 EINECS: 204-589-7 Reg.nr.: 01-2119488943-21	2-Phenoxyethanol ⊠ Acute Tox. 4, H302; Eye Irrit. 2, H319	10-25%
CAS: 107-41-5 EINECS: 203-489-0 Reg.nr.: 01-2119539582-35	2-methylpentane-2,4-diol ⊠ Skin Irrit. 2, H315; Eye Irrit. 2, H319	10-25%
CAS: 85029-58-9 EINECS: 285-083-3 Reg.nr.: 01-2120756276-48	C.I. Solvent Yellow 82 ⊠ Aquatic Chronic 2, H411; ⊠ Skin Sens. 1B, H317	2.5-10%
CAS: 110-25-8 EINECS: 203-749-3 Reg.nr.: 01-2119488991-20	Oleoylsarcosinic acid ⊠ Eye Dam. 1, H318; ⊠ Aquatic Acute 1, H400; ⊠ Acute Tox. 4, H332; Skin Irrit. 2, H315	2.5-10%
CAS: 6786-83-0 EINECS: 229-851-8 Reg.nr.: 01-2119950688-22	C.I. Solvent Blue 4 < 0,1% Michler's Ketone ⊠ Eye Dam. 1, H318; ⊠ Skin Sens. 1B, H317	≤1%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- After inhalation:
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- 4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents:
CO₂, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- 6.2 Environmental precautions:
Inform respective authorities in case of seepage into water course or sewage system.
Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
- 6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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Trade name: M 404 PG3 green

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SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Storage class:** 10
- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
If only a short-term loading of the glove material by splashes is expected, tricoted gloves with higher wearability for the better acceptance of the users are recommended.
- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Nitrile rubber, NBR
 - **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
 - **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**
- **Form:** Fluid
- **Colour:** According to product specification
- **Odour:** Product specific

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EU

Trade name: M 404 PG3 green

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• Odour threshold:	Not determined.
• Important information on protection of health and environment, and on safety.	-
• pH-value at 20 °C:	6,3
• Change in condition Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	185 °C
• Flash point:	94 °C
• Flammability (solid, gas):	Not applicable.
• Ignition temperature:	260 °C
• Decomposition temperature:	Not determined.
• Auto-ignition temperature:	Product is not selfigniting.
• Explosive properties:	Not determined.
• Explosion limits: Lower:	1 Vol %
Upper:	12.6 Vol %
• Vapour pressure at 20 °C:	0.1 hPa
• Density:	Not determined.
• Relative density	Not determined.
• Vapour density	Not determined.
• Evaporation rate	Not determined.
• Solubility in / Miscibility with water:	Not miscible or difficult to mix.
• Partition coefficient: n-octanol/water:	Not determined.
• Viscosity: Dynamic at 20 °C:	16,000 mPas
Kinematic:	Not determined.
• Solvent content: Organic solvents:	52.6 %
Solids content:	42.4 %
• 9.2 Other information	The physical and chemical properties given in Section 9.1 are rough data only, which are partially derived from the component's data of the mixture. These data are no binding product specifications.

SECTION 10: Stability and reactivity

- 10.1 Reactivity No further relevant information available.
- 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided:
No decomposition if used according to specifications.
- 10.3 Possibility of hazardous reactions No dangerous reactions known.
- 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- 10.6 Hazardous decomposition products: No dangerous decomposition products known.

SECTION 11: Toxicological information

- 11.1 Information on toxicological effects
- Acute toxicity Based on available data, the classification criteria are not met.

LD/LC50 values relevant for classification:

122-99-6 2-Phenoxyethanol

Oral LD50 2,740 mg/kg (rat)

110-25-8 Oleoylsarcosinic acid

Oral LD50 9,200 mg/kg (rat)

- Primary irritant effect:
- Skin corrosion/irritation
Causes skin irritation.
- Serious eye damage/irritation
Causes serious eye damage.
- Respiratory or skin sensitisation
May cause an allergic skin reaction.

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Trade name: M 404 PG3 green

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- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **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.

SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

107-41-5 2-methylpentane-2,4-diol

LC50 / 96h 8,510 mg/l (Fish)

- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.

Ecotoxicological effects:

• **Remark:** Harmful to fish

Additional ecological information:

General notes:

Water hazard class 2 (German Regulation) (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Harmful to aquatic organisms

12.5 Results of PBT and vPvB assessment

• **PBT:** Not applicable.

• **vPvB:** Not applicable.

• **12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 13*	sludges from paint or varnish containing organic solvents or other hazardous substances

Uncleaned packaging:

• **Recommendation:** Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

• **ADR, ADN, IMDG, IATA** not applicable

14.2 UN proper shipping name

• **ADR, ADN, IMDG, IATA** not applicable

14.3 Transport hazard class(es)

• **ADR, ADN, IMDG, IATA**

• **Class** not applicable

14.4 Packing group

• **ADR, IMDG, IATA** not applicable

14.5 Environmental hazards:

• **ADR, ADN, IMDG, IATA** Not applicable.

14.6 Special precautions for user

• **ADR, ADN, IMDG, IATA** Not applicable.

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

• **ADR, ADN, IMDG, IATA** Not applicable.

UN "Model Regulation":

• **ADR, ADN, IMDG, IATA** not applicable

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Trade name: M 404 PG3 green

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SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Directive 2012/18/EU
 - Named dangerous substances - ANNEX I None of the ingredients is listed.
 - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
 - National regulations:
 - Technical instructions (air):
- | Class | Share in % |
|-------|------------|
| NK | 50-100 |
- Waterhazard class: Water hazard class 2 (Self-assessment): hazardous for water.
 - 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
 - H302 Harmful if swallowed.
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H318 Causes serious eye damage.
 - H319 Causes serious eye irritation.
 - H332 Harmful if inhaled.
 - H400 Very toxic to aquatic life.
 - H411 Toxic to aquatic life with long lasting effects.
- Abbreviations and acronyms:
 - RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
 - IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
 - ICAO: International Civil Aviation Organisation
 - ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
 - 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 Harmonised System of Classification and Labelling of Chemicals
 - EINECS: European Inventory of Existing Commercial Chemical Substances
 - ELINCS: European List of Notified Chemical Substances
 - CAS: Chemical Abstracts Service (Division of the American Chemical Society)
 - LC50: Lethal concentration, 50 percent
 - LD50: Lethal dose, 50 percent
 - PBT: Persistent, Bioaccumulative and Toxic
 - vPvB: very Persistent and very Bioaccumulative
 - Acute Tox. 4: Acute toxicity - Category 4
 - Skin Irrit. 2: Skin corrosion/irritation - Category 2
 - Eye Dam. 1: Serious eye damage/eye irritation - Category 1
 - Eye Irrit. 2: Serious eye damage/eye irritation - Category 2
 - Skin Sens. 1: Skin sensitisation - Category 1
 - Skin Sens. 1B: Skin sensitisation - Category 1B
 - Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard - Category 1
 - Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard - Category 2
 - Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard - Category 3

EU

**SECTION 1: Identification of the substance/mixture and of the company/
undertaking**

- 1.1 Product identifier
- Trade name: 303/121 B red
- Article number: 100000001314
- Registration number
The ingredients of this ink have been pre-registered according to 1907/2006/EC (REACH)
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Currently no such applications are identified
- Application of the substance / the mixture Ball Pen Ink
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
DOKUMENTAL GmbH & Co KG
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49(0) 621/5402321
Fax + 49(0) 621/5402391
www. dokumental.de
- Further information obtainable from:
Technical Service, Dr. B. Polzin
Tel.: +49-621-5402322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- 1.4 Emergency telephone number:
GBK Gefahrgut Büro GmbH
++49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.
Skin Irrit. 2 H315 Causes skin irritation.

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
- Hazard pictograms



GHS05



GHS07

- Signal word Danger
- Hazard-determining components of labelling:
2-Phenoxyethanol
Phosphoric acid mono-bis-(2-ethylhexyl)-ester
Benzyl alcohol
- Hazard statements
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
- Precautionary statements
P280 Wear protective gloves / eye protection / face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
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.
P321 Specific treatment (see on this label).
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

(Contd. on page 2)

EU

Trade name: 303/121 B red

(Contd. of page 1)

- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
- Description: Mixture of substances listed below with nonhazardous additions.

• Dangerous components:

CAS: 122-99-6 EINECS: 204-589-7	2-Phenoxyethanol ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	25-50%
CAS: 100-51-6 EINECS: 202-859-9	Benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H312; Acute Tox. 4, H332; Eye Irrit. 2, H319	10-25%
CAS: 12645-31-7 EINECS: 235-741-0	Phosphoric acid mono-bis-(2-ethylhexyl)-ester ⚠ Skin Corr. 1C, H314	2.5-10%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- After inhalation:
In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- 4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
- 6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- Information about fire - and explosion protection: No special measures required.
- 7.2 Conditions for safe storage, including any incompatibilities
- Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- 7.3 Specific end use(s) No further relevant information available.

EU
(Contd. on page 3)

Trade name: 303/121 B red

(Contd. of page 2)

SECTION 8: Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **8.1 Control parameters**
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **8.2 Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- **Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Fluid
Colour:	According to product specification
Odour:	Product specific
Odour threshold:	Not determined.
- **Important information on protection of health and environment, and on safety.** -
- **pH-value:** Not determined.
- **Change in condition**

Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	205,4 °C
- **Flash point:** 101 °C
- **Flammability (solid, gas):** Not applicable.
- **Ignition temperature:** 435 °C
- **Decomposition temperature:** Not determined.
- **Auto-ignition temperature:** Product is not selfigniting.
- **Explosive properties:** Not determined.

(Contd. on page 4)

EU

Trade name: 303/121 B red

(Contd. of page 3)

· Explosion limits: Lower:	1.3 Vol %
Upper:	13.0 Vol %
· Vapour pressure at 20 °C:	0.1 hPa
· Density:	Not determined.
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient: n-octanol/water:	Not determined.
· Viscosity: Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content: Organic solvents:	46.8 %
· Solids content:	45.2 %
· 9.2 Other information	The physical and chemical properties given in Section 9.1 are rough data only, which are partially derived from the component's data of the mixture. These data are no binding product specifications.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity**
Harmful if swallowed.
- **LD/LC50 values relevant for classification:**
122-99-6 2-Phenoxyethanol
Oral LD50 2740 mg/kg (rat)
- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **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.

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water

(Contd. on page 5)
EU

Trade name: 303/121 B red

- (Contd. of page 4)
- Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
 - 12.5 Results of PBT and vPvB assessment
 - PBT: Not applicable.
 - vPvB: Not applicable.
 - 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
- Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

- 14.1 UN-Number
• ADR, ADN, IMDG, IATA not applicable
- 14.2 UN proper shipping name
• ADR, ADN, IMDG, IATA not applicable
- 14.3 Transport hazard class(es)
• ADR, ADN, IMDG, IATA
• Class not applicable
- 14.4 Packing group
• ADR, IMDG, IATA not applicable
- 14.5 Environmental hazards:
• Marine pollutant: No
- 14.6 Special precautions for user Not applicable.
- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code Not applicable.
- UN "Model Regulation": not applicable

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
 - Directive 2012/18/EU
 - Named dangerous substances - ANNEX I None of the ingredients is listed.
 - REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3
 - National regulations:
 - Technical instructions (air):
- | Class | Share in % |
|-------|------------|
| NK | 25-50 |
- Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
 - 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

- This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.
- Relevant phrases
H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
 - Abbreviations and acronyms:
RID: Règlement International concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
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 Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances

(Contd. on page 6)
EU

Trade name: 303/121 B red

ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity - Category 4
Skin Corr. 1C: Skin corrosion/irritation - Category 1C
Skin Irrit. 2: Skin corrosion/irritation - Category 2
Eye Dam. 1: Serious eye damage/eye irritation - Category 1
Eye Irrit. 2: Serious eye damage/eye irritation - Category 2
• * Data compared to the previous version altered.

(Contd. of page 5)

EU

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

- **1.1 Product identifier**
- **Trade name:** Dokumental turquoise
- **Article number:** 100000001164
- **Registration number**
The ingredients of this ink have been pre-registered according to 1907/2006/EC (REACH)
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
Currently no such applications are identified
- **Application of the substance / the mixture** Ball Pen Ink
- **1.3 Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
DOKUMENTAL GmbH & Co KG Schreibfarben
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49(0)621/5402321
Fax + 49(0)621/5402391
www.dokumental.de
- **Further information obtainable from:**
Technical Service, Dr. B. Polzin
Tel.: +49-621-5402322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- **1.4 Emergency telephone number:**
GBK Gefahrgut Büro GmbH
++49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**



GHS05

- **Signal word** Danger
- **Hazard-determining components of labelling:**
Phosphoric acid mono-bis-(2-ethylhexyl)-ester
- **Hazard statements**
H315 Causes skin irritation.
H318 Causes serious eye damage.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P321 Specific treatment (see on this label).
P362 Take off contaminated clothing and wash before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
- **2.3 Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.

(Contd. on page 2)

Trade name: Dokumental turquoise

(Contd. of page 1)

• vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- **3.2 Chemical characterisation: Mixtures**
Mixture of the following substances, containing non-hazardous substances and colouring agents.
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 122-99-6 EINECS: 204-589-7	2-Phenoxyethanol ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	25-50%
CAS: 100-51-6 EINECS: 202-859-9	Benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319	10-25%
CAS: 12645-31-7 EINECS: 235-741-0	Phosphoric acid mono-bis-(2-ethylhexyl)-ester ⚠ Skin Corr. 1B, H314	2,5-10%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
- **After inhalation:**
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
Immediately rinse with water.
- **After eye contact:**
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Call for a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
No further relevant information available.
- **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
- **5.3 Advice for firefighters**
- **Protective equipment:** No special measures required.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Storage:**
• **Requirements to be met by storerooms and receptacles:** No special requirements.
• **Information about storage in one common storage facility:** Not required.
• **Further information about storage conditions:** Keep container tightly sealed.

(Contd. on page 3)

Trade name: Dokumental turquoise

(Contd. of page 2)

- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities:** No further data; see item 7.
- 8.1 Control parameters**
- Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information:** The lists valid during the making were used as basis.
- 8.2 Exposure controls**
- Personal protective equipment:**
- General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
- Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties**
- General Information**
- Appearance:**

Form:	Fluid
Colour:	According to product specification
Odour:	Product specific
Odour threshold:	Not determined.
- Important information on protection of health and environment, and on safety.**

-	-
-	-
- pH-value at 20 °C:** 5,3
- Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	205 °C
- Flash point:** 101 °C
- Flammability (solid, gaseous):** Not applicable.
- Ignition temperature:** 435 °C
- Decomposition temperature:** Not determined.

(Contd. on page 4)

Trade name: Dokumental turquoise

(Contd. of page 3)

· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	1,3 Vol %
Upper:	13,0 Vol %
· Vapour pressure at 20 °C:	0,1 hPa
· Density:	Not determined.
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C:	18500 mPas
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	51,0 %
Solids content:	43,4 %
· 9.2 Other information	No further relevant information available.

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

122-99-6 2-Phenoxyethanol

Oral	LD50	2740 mg/kg (rat)
------	------	------------------

- **Primary irritant effect:**
- **on the skin:** Irritant to skin and mucous membranes.
- **on the eye:** Irritating effect.
- **Sensitisation:** No sensitising effects known.
- **Additional toxicological information:**

The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:

Harmful
Irritant

SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability** No further relevant information available.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

(Contd. on page 5)

Trade name: Dokumental turquoise

(Contd. of page 4)

- 12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
- Recommendation
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- European waste catalogue

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
08 01 00	wastes from MFSU and removal of paint and varnish
08 01 13*	sludges from paint or varnish containing organic solvents or other dangerous substances

- Uncleaned packaging:
- Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

- 14.1 UN-Number
ADR, ADN, IMDG, IATA Void
- 14.2 UN proper shipping name
ADR, ADN, IMDG, IATA Void
- 14.3 Transport hazard class(es)
ADR, ADN, IMDG, IATA
Class Void
- 14.4 Packing group
ADR, IMDG, IATA Void
- 14.5 Environmental hazards:
Marine pollutant: No
- 14.6 Special precautions for user Not applicable.
- 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.
- UN "Model Regulation": -

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- National regulations:
- Technical instructions (air):

Class	Share in %
NK	50-100
- Waterhazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Relevant phrases
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
- Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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 Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent

(Contd. on page 6)

Trade name: **Dokumental turquoise**

(Contd. of page 5)

LD50: Lethal dose, 50 percent
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2

· *** Data compared to the previous version altered.**

EU

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

- 1.1 Product identifier
- Trade name: **TF 2162 G3N blue**
- Article number: 100000001187
- Registration number
The ingredients of this ink have been pre-registered according to 1907/2006/EC (REACH)
- 1.2 Relevant identified uses of the substance or mixture and uses advised against
Currently no such applications are identified
- Application of the substance / the mixture Ball Pen Ink
- 1.3 Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
DOKUMENTAL GmbH & Co KG Schreibfarben
Woellnerstraße 26
D-67065 Ludwigshafen
Phone + 49(0)621/5402321
Fax + 49(0)621/5402391
www.dokumental.de
- Further information obtainable from:
Technical Service, Dr. B. Polzin
Tel.: +49-621-5402322
Mobile +49-1726204412
E-Mail: bernd.polzin@dokumental.de
- 1.4 Emergency telephone number:
GBK Gefahrgut Büro GmbH
++49 (0) 6132 / 84463
Ingelheim, Deutschland

SECTION 2: Hazards identification

- 2.1 Classification of the substance or mixture
- Classification according to Regulation (EC) No 1272/2008



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.



GHS07

Skin Irrit. 2 H315 Causes skin irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

- 2.2 Label elements
- Labelling according to Regulation (EC) No 1272/2008
The product is classified and labelled according to the CLP regulation.
- Hazard pictograms



GHS05



GHS07

- Signal word **Danger**
- Hazard-determining components of labelling:
Phosphoric acid mono-bis-(2-ethylhexyl)-ester
C. I. Solvent Blue 4 < 0,1% Michler's Ketone
- Hazard statements
H315 Causes skin irritation.
H318 Causes serious eye damage.
H317 May cause an allergic skin reaction.
- Precautionary statements
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
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.
P321 Specific treatment (see on this label).
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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- 2.3 Other hazards
- Results of PBT and vPvB assessment
- PBT: Not applicable.
- vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

- 3.2 Chemical characterisation: Mixtures
Mixture of the following substances, containing non-hazardous substances and colouring agents.
- Description: Mixture of substances listed below with nonhazardous additions.

Dangerous components:

CAS: 122-99-6 EINECS: 204-589-7	2-Phenoxyethanol ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319	10-25%
CAS: 100-51-6 EINECS: 202-859-9	Benzyl alcohol ⚠ Acute Tox. 4, H302; Acute Tox. 4, H332; Eye Irrit. 2, H319	2,5-10%
CAS: 84281-86-7 EINECS: 282-630-8	C. I. Solvent Violet 8 ⚠ Acute Tox. 4, H302; Eye Irrit. 2, H319; Aquatic Chronic 4, H413	2,5-10%
CAS: 12645-31-7 EINECS: 235-741-0	Phosphoric acid mono-bis-(2-ethylhexyl)-ester ⚠ Skin Corr. 1C, H314	2,5-10%
CAS: 6786-83-0 EINECS: 229-851-8	C. I. Solvent Blue 4 < 0,1% Michler's Ketone ⚠ Eye Dam. 1, H318; ⚠ Skin Sens. 1B, H317	2,5-10%

- Additional information: For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

- 4.1 Description of first aid measures
- After inhalation:
Supply fresh air and to be sure call for a doctor.
In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.
- After swallowing: If symptoms persist consult doctor.
- 4.2 Most important symptoms and effects, both acute and delayed
No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- 5.3 Advice for firefighters
- Protective equipment: No special measures required.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures Wear protective clothing.
- 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Ensure adequate ventilation.
- 6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- Information about fire - and explosion protection: No special measures required.
- 7.2 Conditions for safe storage, including any incompatibilities
- Storage:
Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- Further information about storage conditions: None.
- Storage class: 10

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- 7.3 Specific end use(s) No further relevant information available.

SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities:** No further data; see item 7.
- 8.1 Control parameters**
- Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- Additional information:** The lists valid during the making were used as basis.
- 8.2 Exposure controls**
- Personal protective equipment:**
- General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing
Wash hands before breaks and at the end of work.
Avoid contact with the skin.
Avoid contact with the eyes and skin.
- Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
- Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
- Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
- Eye protection:**



Tightly sealed goggles

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties**
- General Information**
- Appearance:**

Form:	Fluid
Colour:	According to product specification
- Odour:** Product specific
- Odour threshold:** Not determined.
- Important information on protection of health and environment, and on safety.**

-	-
-	-
- pH-value at 20 °C:** 5,8
- Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	185 °C
- Flash point:** 101 °C
- Flammability (solid, gaseous):** Not applicable.
- Ignition temperature:** 371 °C
- Decomposition temperature:** Not determined.

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· Self-igniting:	Product is not selfigniting.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	2,6 Vol %
Upper:	12,6 Vol %
· Vapour pressure at 20 °C:	0,1 hPa
· Density at 20 °C:	1,1 g/cm ³
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic at 20 °C:	16000 mPas
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	48,8 %
Solids content:	44,3 %
· 9.2 Other information	The physical and chemical properties given in Section 9.1 are rough data only, which are partially derived from the component's data of the mixture. These data are no binding product specifications.

SECTION 10: Stability and reactivity

- **10.1 Reactivity** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **10.3 Possibility of hazardous reactions** No dangerous reactions known.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

· **LD/LC50 values relevant for classification:**

122-99-6 2-Phenoxyethanol

Oral	LD50	2740 mg/kg (rat)
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84281-86-7 C. I. Solvent Violet 8

Oral	LD50	700 mg/kg (rat)
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- **Primary irritant effect:**
- **Skin corrosion/irritation**
Causes skin irritation.
- **Serious eye damage/irritation**
Causes serious eye damage.
- **Respiratory or skin sensitisation**
May cause an allergic skin reaction.
- **Acute effects (acute toxicity, irritation and corrosivity)**
Based on the guideline OECD 431 in vitro tests have been performed. These tests proved, that the ink does not show any corrosive effect to the human skin.
- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**
- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.
- **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.

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SECTION 12: Ecological information

12.1 Toxicity

Aquatic toxicity:

6786-83-0 C. I. Solvent Blue 4 < 0,1% Michler's Ketone

EC50 / 48h 0,025 mg/l (Daphnie)

12.2 Persistence and degradability No further relevant information available.

12.3 Bioaccumulative potential No further relevant information available.

12.4 Mobility in soil No further relevant information available.

Additional ecological information:

General notes:

Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
Danger to drinking water if even extremely small quantities leak into the ground.

12.5 Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects No further relevant information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Recommendation

Must not be disposed together with household garbage. Do not allow product to reach sewage system.

European waste catalogue

08 00 00	WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS
----------	---

08 01 00	wastes from MFSU and removal of paint and varnish
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08 01 13*	sludges from paint or varnish containing organic solvents or other hazardous substances
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Uncleaned packaging:

Recommendation: Disposal must be made according to official regulations.

SECTION 14: Transport information

14.1 UN-Number

ADR, ADN, IMDG, IATA not applicable

14.2 UN proper shipping name

ADR, ADN, IMDG, IATA not applicable

14.3 Transport hazard class(es)

ADR, ADN, IMDG, IATA not applicable

Class

not applicable

14.4 Packing group

ADR, IMDG, IATA not applicable

14.5 Environmental hazards:

Marine pollutant: No

14.6 Special precautions for user

Not applicable.

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

Not applicable.

UN "Model Regulation":

not applicable

SECTION 15: Regulatory information

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

Directive 2012/18/EU

Named dangerous substances - ANNEX I None of the ingredients is listed.

National regulations:

Technical instructions (air):

Class	Share in %
NK	25-50

Waterhazard class: Water hazard class 3 (Self-assessment): extremely hazardous for water.

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- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

• Relevant phrases

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H413 May cause long lasting harmful effects to aquatic life.

• Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organisation
ICAO-TI: Technical Instructions by the "International Civil Aviation Organisation" (ICAO)
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 Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Acute Tox. 4: Acute toxicity, Hazard Category 4
Skin Corr. 1C: Skin corrosion/irritation, Hazard Category 1C
Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1
Eye Irrit. 2: Serious eye damage/eye irritation, Hazard Category 2
Skin Sens. 1: Sensitisation - Skin, Hazard Category 1
Skin Sens. 1B: Sensitisation - Skin, Hazard Category 1B
Aquatic Chronic 4: Hazardous to the aquatic environment - Chronic Hazard, Category 4

- *** Data compared to the previous version altered.**