

Material Safety Data Sheet

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

1.1 Product identifiers

Product name: **Penol 0700/0750**
 Use of the: Composition: **PERMANENT MARKER_GREEN**
 Brand: **Ink, Polypropylene, and polyester**

1.2 Details of the supplier of the safety data sheet

Company: Penol a/s
 Rygaards Allé 114
 2900 Hellerup - Denmark
 Telephone: +45-39297172
 Fax: +45-39294991
 E-mail address: www.penol.com

1-3 Emergency telephone number

Emergency Phone#: Contact Giftlinien på tlf.nr.: 82 12 12 12 (open 24 hours 365 days).

SECTION 2: Hazards identification

2.1 Classification

1) Ink

Classification according to Regulation (EC) No 1272/2008
 Flammable liquids (Category 2), H225
 Eye irritation (Category 2A), H319
 Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3), H335, H336

2) Polypropylene

None

3) Polyester

Non-hazardous ingredients by criteria of 29 CFR 1910.1200

2.2 Label elements

1) Ink

Danger symbols : F
 R-Phrases : R11
 Danger Identification : Highly flammable.

2) Polypropylene

None

3) Polyester

Non-hazardous ingredients by criteria of 29 CFR 1910.1200

2.3 Other Hazard-none

SECTION 3: Composition / information on ingredients

1) Ink

| Ingredient name | CAS-No | EINECS | Content(%) | Classification |
|----------------------|------------|-----------|------------|----------------------|
| ETHANOL | 64-17-5 | 200-578-6 | ≤50 | R11, H225 |
| 1-METHOXY-2-PROPANOL | 107-98-2 | 203-539-1 | ≤40 | R10, H226 |
| BASIC YELLOW 29 | 39279-59-9 | - | ≤1.5 | R36, R67, H319, H335 |
| SOLVENT BLUE 70 | 12237-24-0 | 602-674-7 | ≤6.0 | R36/37/38 |
| FORTIFIED ROSIN | 8050-28-0 | 232-480-4 | ≤15 | - |

2) Polypropylene

| Ingredient name | CAS-No | Content(%) |
|-----------------|-----------|------------|
| Polypropylene | 9010-79-1 | ≤99 |
| Additives | - | ≤1 |

3) Polyester

| Ingredient name | CAS-No | Content(%) |
|-----------------|------------|------------|
| Polyester | 25038-59-9 | ≤100 |

SECTION 4: First aid measures

1) Ink

a) Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

Skin contact

Wash off with soap and plenty of water. Consult a physician.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Inhalation

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

b) Symptoms and Effects

The most important known symptoms and effects are described in the labelling and/or in section 11

2) Polypropylene

a) Description of first aid measures

General advice

Eye contact

Flush eyes thoroughly with water for 15 minutes at least. If effects occur, consult a physician.

Skin contact

If molten material comes in contact with the skin, do not apply ice but cool under ice water. Seek medical attention immediately.

Inhalation

Move person to fresh air; if effects occur, consult a physician.

Ingestion

If swallowed, seek medical attention.

b) Most important symptoms and effects, both acute and delayed

Not established

c) Indication of any immediate medical attention and special treatment needed

treatment should be directed at the control of symptoms and the clinical condition of the patient.

3) Polyester

a) Description of first aid measures

General advice

Eye contact

Rinse opened eye for several minutes under running water, if symptoms persist, consult a physician.

Skin contact

First aid is not required.

Ingestion

No specific medical measures have to be taken if the product is swallowed. Get medical advice if necessary.

b) Most important symptoms and effects, both acute and delayed

Not established

c) Indication of any immediate medical attention and special treatment needed

Not established.

SECTION 5 : Fire-fighting measures

1) Ink

Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special Exposure Hazards

no data available

Personal Protective Equipment

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

2) Polypropylene

Extinguishing media

Suitable extinguishing media are dry chemical fire extinguishers, carbon dioxide fire extinguisher, foam, water fog or fine spray.

Special hazards arising from the substance or mixture

During a fire, smoke contain the original material in addition to combustion products of varying composition which may be toxic or irritation.

Special protective equipment and precautions for firefighters

Wear fire fighting clothing (helmet, coat, trousers, boots and gloves).

Keep people away. Cool surroundings with water to localize fire zone.

Hand held dry chemical or CO2 extinguishers may be used for small fires.

3) Polyester

Extinguishing media

Agents for Class A hazards - Water, Foam, Halogenated agents.

Special hazards arising from the substance or mixture

Protect from smoke inhalation, decomposition and combustion products. Use self-contained breathing apparatus.

Special protective equipment and precautions for firefighters

Not established.

SECTION 6 : Accidental release measure

1) Ink

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

2) Polypropylene

Personal precautions, protective equipment and emergency procedures

Isolate the hazard area. Use appropriate safety equipment. Spilled material may cause a slipping hazard.

Environmental precautions

Prevent from entering into soil, ditches, sewers, waterways and/or groundwater.

Methods and materials for containment and cleaning up

Contain spilled material if possible. Sweep up.

Collect in suitable containers.

3) Polyester

Personal precautions, protective equipment and emergency procedures

No specific measure are necessary.

Environmental precautions

No specific measure are necessary.

Methods and materials for containment and cleaning up

No specific measure are necessary.

SECTION 7 : Handling and storage

1) Ink

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Specific end use(s)

A part from the uses mentioned in section 1.2 no other specific uses are stipulated

2) Polypropylene

Precaution for safe handling

Good housekeeping and controlling of dusts are necessary for safe handling of product.

Dust can be ignited by static discharge.

Condition for safe storage including incompatibilities;

Store in accordance with good manufacturing practices.

3) Polyester

Precaution for safe handling

No specific measure are necessary.

Condition for safe storage including incompatibilities;

No specific measure are necessary.

SECTION 8 : Exposure controls / personal protection

1) Ink

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Hand protection

Wear chemical resistant butyl rubber gloves.

Eye Protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection

impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

2) Polypropylene

Exposure limits in the air of the workplace, biological limit values;

Not applicable

Appropriate engineering controls

Good general ventilation should be adopted.
Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Respiratory protection

Use and approved air-purifying respirator when vapors are generated at increased temperatures or when dust or mist is present.

The following should be effective types of air-purifying respirators

- Particulate filter
- Organic vapor cartridge with a particulate pre-filter

Eye protection

Use safety glasses. Wear chemical goggles. Set up the emergency washing unit near working area.

Hand protection

Use gloves with insulation for thermal protection.

Body protection

No precautions other than clean body-covering clothing should be needed.

3) Polyester

General advices

Do not eat or swallow while working and no smoking.

SECTION 9 : Physical and chemical properties

1) Ink

| | |
|-------------------------------------------|------------------------------|
| Appearance : | Coloured liquid |
| Physical State : | Liquid |
| Odour : | No data available |
| Melting point/freezing point : | -144.0 °C |
| Viscosity : | ≥ 8.0cps at 25.0 °C |
| pH : | ≥ 5.5 at 25.0 °C |
| Initial boiling point and boiling range : | 118 – 119 °C |
| Miscibility : | Solvents miscible with water |
| Evaporation rate : | no data available |
| Flash Point : | 34.0 °C - closed cup |
| Flammability (solid, gas) : | no data available |
| Explosive Limits : | no data available |
| Auto-ignition temperature : | 425.0 °C |
| Surface tension : | ≥ 23 mN/m at 25.0 °C |

Specific gravity : ≥ 0.83 at 25.0 °C

2) Polypropylene

| | |
|------------------------------------------------|----------------------------------|
| Appearance : | Pellet with white or milky color |
| Odour : | Odorless |
| Odour threshold : | Data not available |
| pH : | Data not available |
| Melting point/Freezing point | 140~170°C / 110~ 135°C |
| Initial boiling point and boiling range : | Data not available |
| Flash point : | Data not available |
| Evaporation rate : | Data not available |
| Flammability : | Data not available |
| Upper/lower flammability or explosive limits : | Data not available |
| Vapour pressure : | Data not available |
| Solubility : | Data not available |
| Vapour density : | Data not available |
| Specific gravity : | 0.9 |
| Partition coefficient : n-octanol/water : | Data not available |
| Auto-ignition temperature : | 350°C |
| Decomposition temperature : | Data not available |
| Viscosity : | >100PaS at 190°C 100 1/s |

3) Polyester

| | |
|-----------------------------|---------------------|
| Appearance : | Solid |
| Odour : | Odorless |
| Boiling point : | Data not available |
| Flash point : | Data not available |
| Melting Point : | 155 ~ 170 °C |
| Ignition Point : | 400 °C |
| Decomposition temperature : | 0.9 ~ 0.92 g/Cm x 2 |
| Density at 20 °C | |

SECTION 10 : Stability and reactivity

1) Ink

Reactivity

no data available

Conditions to avoid

Heat, flames and other sources of ignition.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

Incompatible materials

Alkali metals, Ammonia, Oxidizing agents, Peroxides

Hazardous decomposition products

Other decomposition products - no data available

2) Polypropylene

Chemical stability

Stable at room temperature and atmospheric pressure.

Possibility of hazardous reactivity

Will not occur

Conditions to avoid

Exposure to elevated temperature. Flame. Ignition source.

Incompatible materials

Data not available

Hazardous decomposition products

Processing may release fumes and other decomposition products. Fumes can be irritating.

3) Polyester

Stability

Polyester will begin to shrink/stick at 440 degrees F; disintegrates in strong alkalis at boiling.

Compatibility with other substances

Polyester dissolves by strong alkalis at high concentrations and temperatures. Partial decomposition by concentrated solutions of nitric, sulfuric and carboric acids. Unsuitable for some phenolic compounds and can be affected by cyclohexanone above 300 degrees F.

Hazardous decomposition products

May include carbon, hydrogen and oxygen. The exact composition depends upon the condition of combustion.

Reactivity

Polyester has good resistance to most organic and mineral acids and to weak alkalies.

SECTION 11 : Toxicological information**1) Ink****Acute toxicity**

64-17-5

LD50 Oral - rat - 7.060 mg/kg

Remarks: Lungs, Thorax, or Respiration:Other changes. LC50 Inhalation - rat - 10 h - 20000 ppm

107-98-2

LD50 Oral - mouse - 11.700 mg/kg

Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia. Lungs, Thorax, or Respiration:Dyspnea.

LC50 Inhalation - rat - 5 h - 10000 ppm LD50 Dermal - rabbit - 13.000 mg/kg

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

64-17-5

Eyes - rabbit

Result: Mild eye irritation - 24 h

(Draize Test)

Respiratory or skin sensitisation

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness

Specific target organ toxicity - repeated exposure

no data available

Aspiration hazard

no data available

2) Polypropylene**Inhalation exposure**

Dust inhalation may cause cough.

Ingestion exposure

Data not available

Skin exposure

Data not available

Eye exposure

Data not available

3) Polyester**Acute or chronic effects**

None

Effects of everexposure

None under normal handling

Carcinogenicity

Negligible to 0 free formaldehyde after processing.

SECTION 12 : Ecological information**1) Ink****Toxicity**

no data available

Mobility

no data available

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

2) Polypropylene

Aquatic, terrestrial organisms toxicity

Data not available

Persistence and degradability

Data not available

Bioaccumulative potential

Data not available

Mobility in soil

Data not available

Other adverse effects

Data not available

3) Polyester

Ecotoxicity

Data not available

Mobility

Data not available

Persistence and degradability

Data not available

Bioaccumulative potential

Data not available

SECTION 13 : Disposal considerations

1) Ink

Disposal methods

Product Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

2) Polypropylene

Disposal methods

All disposal practices must be in compliance with all Federal, state/provincial and local laws and regulations.

Disposal considerations (Specify disposal container and methods)

Data not available

3) Polyester

Disposal methods

All disposal must be in accordance with applicable federal, state and/or local regulations.

SECTION 14 : Transport information

1) Ink

UN NO. : 1993

Proper shipping name : Flammable liquid n.o.s (Contains Isopropanol)

ADR, IATA, IMDG Hazard Class : 3

Packing Group : 2

2) Polypropylene

UN NO. : Data not available

Proper shipping name : Data not available

ADR, IATA, IMDG Hazard Class : Data not available

Packing Group : Data not available

3) Polyester

UN NO. : Data not available

Proper shipping name : Data not available

ADR, IATA, IMDG Hazard Class : Data not available

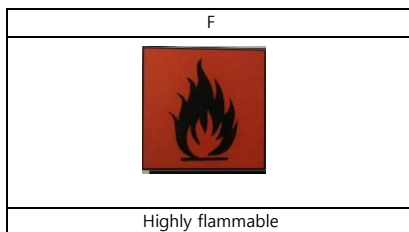
Packing Group : Data not available

SECTION 15 : Regulatory information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006. And regulation (EC) No. 12721/2008

1) Ink

Hazard symbols



R-phrases

R11 : Highly flammable

S-phrases

S2 : Keep out of reach of children
 S7 : Keep container tightly closed
 S16 : Keep away from sources of ignition. No smoking.

2) Polypropylene**Safety, health and environmental regulations specific for the product in question:**

USA

- CERCLA 103 (40CFR302.4) : Not regulated
- SARA 302 (40CFR355.30) : Not regulated
- CERCLA 304 (40CFR355.40) : Not regulated
- CERCLA 313 (40CFR372.65) : Not regulated
- OSHA (29CFR1910.119) : Not regulated
- California proposition 65 : Not regulated

EU

- EC Classification : not determined

ETD

- TSCA : Not listed
- TSCA 12(b) : Not listed

3) Polyester

no data available

SECTION 16 : Other information**Further information**

Copyright 2013 ORIENT CHEMICAL LTD., License granted to make unlimited paper copies for internal use only.

Sources of key data used to compile the data sheet:

EC Directive 67/548/EC resp. 99/45/EC as amended in each case.
 Regulation (EC) No 1907/2006 (REACH) as amended in each case.
 EC Directives 2000/39/EC, 2006/15/EC as amended in each case.
 National Threshold Limit Values of the corresponding countries as amended in each case.
 Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.
 Institute for Health and Consumer Protection (IHCP).
 European Chemicals Agency (ECHA).
 ChemIDplus Lite.
 Chemicals Information System (NCIS).
 U.S. Environmental Protection Agency.
 United States National Library of Medicine (NLM).
 International Agency for Research on Cancer (IARC).
 Incorporated Administrative Agency National Institute of Technology and Evaluation. (NITE).
 Raw material company's MSDS

The information contained herein does not constitute the user's own assessment of workplace risk as required by other health and safety legislation. The above information is provided in good faith and is based on our present knowledge. It shall not constitute a guarantee for any specific product feature and shall not establish a legally valid contractual arrangement. Above products are not at least in the quality.

Issuing date

16. APRIL 2018

Version

No.1