

**Safety Data Sheet**  
According to OSHA HazCom Standard [2012]

Date of issue: 12/11/2025

Version 1

Reviewed on 12/11/2025

**1 Identification****Product identifier****Trade name:** PEN-40 and PEN-40IR LabMarker**Other means of identification****Application of the substance / the mixture:** Cleanroom and Aseptic environment documentation**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Micronova Manufacturing  
3431 West Lomita Boulevard  
Torrance, CA, 90505, USA  
Tel: +1 (310)784-6990  
Fax: +1 (310)784-6980  
Email: quality@micronova-mfg.com  
www.micronova-mfg.com**Emergency telephone number:**CHEMTREC: +1 703-741-5970 (24h)  
CHEMTREC International: +1(703) 527-3887 (24 hours)  
+1 (800)424-9300**2 Hazard(s) identification****Classification of the substance or mixture**

Flammable liquids 3	H226 Flammable liquid and vapor.
Skin irritation 2	H315 Causes skin irritation.
Eye irritation 2A	H319 Causes serious eye irritation.
Sensitization - skin 1	H317 May cause an allergic skin reaction.
Germ cell mutagenicity 2	H341 Suspected of causing genetic defects.
Carcinogenicity 2	H351 Suspected of causing cancer.

**Label elements****GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**

GHS02 GHS07 GHS08

**Signal word** Warning**Hazard-determining components of labeling:**C.I. Solvent Yellow 14  
1-[(2-Methylphenyl)azo]-2-naphthol**Hazard statements**H226 Flammable liquid and vapor.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H341 Suspected of causing genetic defects.  
H351 Suspected of causing cancer.**Precautionary statements:**P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 Wash thoroughly after handling.

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P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P321	Specific treatment (see on this label).
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P362+P364	Take off contaminated clothing and wash it before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

**Additional Information:**
**Information pertaining to particular dangers for man and environment:**
**Classification system:**
**NFPA ratings (scale 0 - 4)**

**HMIS-ratings (scale 0 - 4)**

HEALTH	2	Health = 2
FIRE	3	Fire = 3
REACTIVITY	0	Reactivity = 0

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

**vPvB:** Not applicable.

**Classification according to (d)(1)(ii) of § 1910.1200**

The SDS issuer does not object to the classifications provided by importers or manufacturers of precursor products.

**Hazards not otherwise classified**

There are no adverse physical or health effects known that are not covered by the hazard classes of the Hazard Communications Standard.

### 3 Composition/information on ingredients

**Description:** Mixture: consisting of the following components.

Hazardous Components:		
842-07-9	C.I. Solvent Yellow 14 Germ cell mutagenicity 2, H341; Carcinogenicity 2, H351; Sensitization - skin 1, H317; Aquatic Chronic 4, H413	≥5-≤10%
1330-20-7	Xylene Flammable liquids 3, H226; Acute toxicity - dermal 4, H312; Acute toxicity - inhalation 4, H332; Skin irritation 2, H315	≥5-≤10%
2646-17-5	1-[(2-Methylphenyl)azo]-2-naphthol Carcinogenicity 2, H351	≥5-≤10%
2807-30-9	2-(Propyloxy)ethanol Flammable liquids 3, H226; Acute toxicity - dermal 4, H312; Eye irritation 2A, H319	≥5-≤10%
Information on components:		
842-07-9	C.I. Solvent Yellow 14 Germ cell mutagenicity 2, H341; Carcinogenicity 2, H351; Sensitization - skin 1, H317; Aquatic Chronic 4, H413	≥5-≤10%

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**Trade name:** PEN-40 and PEN-40IR LabMarker**4 First-aid measures****Description of first aid measures****General information:** Immediately remove any clothing soiled by the product.**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.

If skin irritation continues, consult a doctor.

**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.**Most important symptoms and effects, both acute and delayed**

No further relevant information available.

**Indication of any immediate medical attention and special treatment needed**

In case of inhalation of decomposition products in a fire, symptoms may be delayed.

Medical supervision for at least 48 hours.

**5 Fire-fighting measures****Extinguishing media****Suitable extinguishing agents:**

Water spray

Dry chemical

Foam

Carbon dioxide

If individual marker should catch fire, douse with or immerse in plain water.

**For safety reasons unsuitable extinguishing agents:** Water with full jet**Special hazards arising from the substance or mixture**

Emits acrid smoke and toxic fumes under fire conditions.

Decomposition products may include the following materials:

carbon dioxide

carbon monoxide

nitrogen oxides

**Advice for firefighters****Protective equipment:**

Wear a positive pressure self-contained breathing apparatus

Wear fully protective suit.

**6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Do not touch or walk through spilled material.

**Environmental precautions:**

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

Inform respective authorities in case of seepage into water course or sewage system.

**Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Broken packages or leaking markers: sweep into closable container to disposal.

Dispose contaminated material as waste according to section 13.

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**Special spill response procedures:  
Protective Action Criteria for Chemicals**

<b>PAC-1:</b>		
1330-20-7	Xylene	130 ppm
2807-30-9	2-(Propyloxy)ethanol	1.3 ppm
<b>PAC-2:</b>		
1330-20-7	Xylene	920 ppm
2807-30-9	2-(Propyloxy)ethanol	14 ppm
<b>PAC-3:</b>		
1330-20-7	Xylene	2500 ppm
2807-30-9	2-(Propyloxy)ethanol	86 ppm

**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.

**7 Handling and storage**

**Precautions for safe handling**

Ensure good ventilation/exhaustion at the workplace.  
Open and handle receptacle with care.  
Prevent formation of aerosols.  
Do not eat, drink, smoke or sniff while working.

**Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.  
Keep respiratory protective device available.

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

**Requirements to be met by storerooms and receptacles:**

Store only in the original receptacle.  
Store in cool, dry conditions in well sealed receptacles.  
Do not store in unlabelled containers.

**Information about storage in one common storage facility:** Store away from foodstuffs.

**Further information about storage conditions:**

Keep receptacle tightly sealed.  
Protect from heat and direct sunlight.

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

**8 Exposure controls/personal protection**

**Control parameters**

**Components with limit values that require monitoring at the workplace:**

The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the other constituents have no known exposure limits.

<b>1330-20-7 Xylene</b>	
PEL	Long-term value: 435 mg/m <sup>3</sup> , 100 ppm
REL	Short-term value: 655 mg/m <sup>3</sup> , 150 ppm Long-term value: 435 mg/m <sup>3</sup> , 100 ppm
TLV	Long-term value: 20 ppm BEI, A4

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<b>Ingredients with biological limit values:</b>	
<b>1330-20-7 Xylene</b>	
BEI	0.3 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids

**Additional information:** The lists that were valid during the creation were used as basis.

### Exposure controls

#### Personal protective equipment

#### General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Store protective clothing separately.  
Avoid contact with the eyes and skin.

#### Breathing equipment:

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

#### Protection of hands:



Protective gloves

The glove material must 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

Goggles recommended during refilling.

**Body protection:** Protective work clothing

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

**Physical state**

Liquid

**Odor:**

**Odor threshold:**

Not determined.

**Melting point/Melting range:**

Not determined.

**Boiling point/Boiling range:**

138.33-149.44 °C (281-301 °F)

**Flammability:**

Flammable.

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**Explosion limits:**

<b>Lower:</b>	1-1.26 Vol %
<b>Upper:</b>	7-15.8 Vol %
<b>Flash point:</b>	27.2-48.9 °C (81-120 °F) (Closed cup)
<b>Auto-ignition temperature:</b>	230 °C (446 °F)
<b>Decomposition temperature:</b>	Not determined.
<b>pH-value:</b>	Not determined.
<b>Viscosity:</b>	
<b>Kinematic:</b>	Not determined.
<b>Dynamic:</b>	Not determined.
<b>Solubility in / Miscibility with Water:</b>	Partly soluble.
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Vapor pressure at 20 °C (68 °F):</b>	1.7-28 hPa (1.3-21 mm Hg)
<b>Vapor pressure:</b>	
<b>Density at 20 °C (68 °F):</b>	0.9 g/cm <sup>3</sup> (7.5105 lbs/gal)
<b>Relative density</b>	Not determined.
<b>Bulk density:</b>	900 kg/m <sup>3</sup>
<b>Vapor density</b>	Not determined.
<b>Particle characteristics</b>	Not applicable.

**Other information**

<b>Appearance:</b>	
<b>Form:</b>	Viscous liquid.
<b>Danger of explosion:</b>	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

**Flammability Limits:**

<b>Lower:</b>	Not Determined.
<b>Upper:</b>	Not Determined.
<b>VOC content:</b>	10-20 %
<b>Solids content:</b>	10-20 %
<b>Oxidizing properties</b>	Not determined.
<b>Evaporation rate at 20 °C (68 °F)</b>	<1 (Butyl acetate = 1)

**10 Stability and reactivity**

**Reactivity** No further relevant information available.

**Chemical stability**

**Thermal decomposition / conditions to be avoided:**  
No decomposition if used according to specifications.

**Possibility of hazardous reactions** No dangerous reactions known.

**Conditions to avoid** No further relevant information available.

**Incompatible materials:** Oxidizing agents.

**Hazardous decomposition products:** No dangerous decomposition products known.

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

<b>LD/LC50 values that are relevant for classification:</b>		
<b>1330-20-7 Xylene</b>		
Oral	LD50	4,300 mg/kg (Rat)
Dermal	LD50	2,000 mg/kg (rabbit)

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**Primary irritant effect:**

**on the skin:** Irritant to skin and mucous membranes.

**on the eye:** Irritating effect.

**Sensitization:** Sensitization possible through skin contact.

**Germ cell mutagenicity** Suspected of causing genetic defects.

**Carcinogenicity** Suspected of causing cancer

**Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

Irritant

**Interactive effects** No interactive effects between components are known.

**Carcinogenic categories**

IARC (International Agency for Research on Cancer)		
842-07-9	C.I. Solvent Yellow 14	3
1330-20-7	Xylene	3
2646-17-5	1-[(2-Methylphenyl)azo]-2-naphthol	2B

**NTP (National Toxicology Program)**

None of the ingredients are listed.

**OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

**Alternative sources for toxicological information**

No non-standard sources for toxicological information where used.

## 12 Ecological information

**Toxicity**

Aquatic toxicity:	
<b>1330-20-7 Xylene</b>	
LC50/96h	24-30 mg/L (Minnow)
LC50/24h	100-1,000 mg/L (Daphnia)

**Persistence and degradability** No further relevant information available.

**Bioaccumulative potential** Bioaccumulation is not expected.

**Mobility in soil** No further relevant information available.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects**

**Additional ecological information**

**General notes:**

Water hazard class 2 (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.

## 13 Disposal considerations

**Waste treatment methods**

**Recommendation:**

Disposal must be made in accordance with official regulations.

Do not allow product to reach sewage system.

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**Uncleaned packagings:**

**Recommendation:**

Disposal must be made according to official regulations.

Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

**14 Transport information**

**UN-Number**

DOT, ADR, IMDG, IATA UN2920

**UN proper shipping name**

DOT Corrosive liquids, flammable, n.o.s. (2-(Propyloxy) ethanol, Xylenes)

ADR 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. (2-(Propyloxy)ethanol, XYLENES)

IMDG, IATA CORROSIVE LIQUID, FLAMMABLE, N.O.S. (2-(Propyloxy)ethanol, XYLENES)

**Transport hazard class(es)**

**DOT**



Class 8 Corrosive substances  
Label 8, 3

**ADR**



Class 8 Corrosive substances  
Label 8+3

**IMDG**



Class 8 Corrosive substances  
Label 8/3

**IATA**



Class 8 Corrosive substances  
Label 8 (3)

**Packing group**

DOT, ADR, IMDG, IATA II

**Environmental hazards:** Not applicable.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

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**Transport/Additional information:**

**DOT**

**Quantity limitations**

On passenger aircraft/rail: 1 L  
On cargo aircraft only: 30 L

**ADR**

**Excepted quantities (EQ)**

Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml

**IMDG**

**Limited quantities (LQ)**

**Excepted quantities (EQ)**

1L  
Code: E2  
Maximum net quantity per inner packaging: 30 ml  
Maximum net quantity per outer packaging: 500 ml

**Special precautions for user**

**Hazard identification number (Kemler code):**

**EMS Number:**

**Stowage Category**

**Stowage Code**

Warning: Corrosive substances  
83  
F-E,S-C  
C  
SW1 Protected from sources of heat.  
SW2 Clear of living quarters.

**15 Regulatory information**

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

No further relevant information available.

**Sara**

**Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

**Section 313 (Specific toxic chemical listings):**

842-07-9	C.I. Solvent Yellow 14
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1330-20-7	Xylene
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**USA - TSCA (Toxic Substances Control Act):**

All components have the value ACTIVE.

**Hazardous Air Pollutants**

1330-20-7	Xylene
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**Proposition 65**

**Chemicals known to cause cancer:**

842-07-9	C.I. Solvent Yellow 14
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2646-17-5	1-[(2-Methylphenyl)azo]-2-naphthol
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**Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

**Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

**Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

**Carcinogenic categories**

**EPA (Environmental Protection Agency)**

1330-20-7	Xylene	
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**TLV (Threshold Limit Value)**

1330-20-7	Xylene		A4
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**NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

**GHS label elements**

The product is classified and labeled according to the Globally Harmonized System (GHS).

**Hazard pictograms**



GHS02 GHS07 GHS08

**Signal word** Warning

**Hazard-determining components of labeling:**

C.I. Solvent Yellow 14

1-[(2-Methylphenyl)azo]-2-naphthol

**Hazard statements**

H226 Flammable liquid and vapor.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

H351 Suspected of causing cancer.

**Precautionary statements**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P264 Wash thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P321 Specific treatment (see on this label).

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P362+P364 Take off contaminated clothing and wash it before reuse.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**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.

**Date of previous version** 12/11/2025

**Date of preparation** 12/11/2025

**Abbreviations and acronyms:**

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

BEI: Biological Exposure Limit

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Flammable liquids 3: Flammable liquids – Category 3  
Acute toxicity - dermal 4: Acute toxicity – Category 4  
Skin irritation 2: Skin corrosion/irritation – Category 2  
Eye irritation 2A: Serious eye damage/eye irritation – Category 2A  
Sensitization - skin 1: Skin sensitisation – Category 1  
Germ cell mutagenicity 2: Germ cell mutagenicity – Category 2  
Carcinogenicity 2: Carcinogenicity – Category 2  
Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4