

**Safety Data Sheet**  
according to HPR, Schedule 1

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**1 Identification****Product identifier****Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR**Other means of identification****Application of the substance / the mixture:** Ball point pen ink**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 identification****Classification of the substance or mixture**

Skin Irritation - Category 2	H315 Causes skin irritation.
Eye damage/irritation – Category 1	H318 Causes serious eye damage.
Reproductive Toxicity - Category 1B	H360 May damage fertility or the unborn child.
Specific target organ toxicity (single exposure) – Category 3	H335 May cause respiratory irritation.

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

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

**Hazard pictograms**

GHS05 GHS07 GHS08

**Signal word** Danger**Hazard-determining components of labeling:**2-Phenoxyethanol  
N-methyl-2-pyrrolidone**Hazard statements**H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H360 May damage fertility or the unborn child.  
H335 May cause respiratory irritation.**Precautionary statements:**

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P310	Immediately call a POISON CENTER/doctor.

## Safety Data Sheet

according to HPR, Schedule 1

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR

P321 Specific treatment (see on this label).  
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
 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.  
 P332+P313 If skin irritation occurs: 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)



### 3 Composition/Information on ingredients

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

Hazardous Components:		
122-99-6	2-Phenoxyethanol Eye damage/irritation – Category 1, H318; Acute Toxicity (Oral) - Category 4, H302; Specific target organ toxicity (single exposure) – Category 3, H335	≥20-≤60% w/w *
872-50-4	N-methyl-2-pyrrolidone Reproductive Toxicity - Category 1B, H360; Skin Irritation - Category 2, H315; Eye damage/irritation – Category 2A, H319; Specific target organ toxicity (single exposure) – Category 3, H335; Flammable liquids – Category 4, H227 Specific concentration limit: Specific Target Organ Toxicity - Single Exposure - Category 3; H335: C ≥ 10 %	≥15-≤60% w/w *

\* Actual concentration ranges are withheld as a trade secret.

Information on components:		
122-99-6	2-Phenoxyethanol Eye damage/irritation – Category 1, H318; Acute Toxicity (Oral) - Category 4, H302; Specific target organ toxicity (single exposure) – Category 3, H335	≥20-≤60% w/w

### 4 First-aid measures

#### Description of first aid measures

**General information:** Immediately remove any clothing soiled by the product.

#### After inhalation:

In case of unconsciousness place patient stably in side position for transportation.  
 Call a doctor immediately.

#### 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. Then consult a doctor.

**Safety Data Sheet**  
*according to HPR, Schedule 1*

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR**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

Foam

Dry chemical

Carbon dioxide

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

**Special hazards arising from the substance or mixture**

Emits toxic fumes under fire conditions.

Decomposition products may include the following materials:

carbon dioxide

carbon monoxide

nitrogen oxides

sulfur 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:**

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

Use neutralizing agent.

Ensure adequate ventilation.

Dispose contaminated material as waste according to section 13.

**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.

**Safety Data Sheet**  
according to HPR, Schedule 1

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR

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

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.

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

**Further information about storage conditions:** Keep receptacle tightly sealed.

**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:**

**122-99-6 2-Phenoxyethanol**

EV (Canada)	TWA: 141 mg/m <sup>3</sup> , 25 ppm Skin
-------------	---

**872-50-4 N-methyl-2-pyrrolidone**

EV (Canada)	TWA: 400 mg/m <sup>3</sup>
WEEL (USA)	TWA: 10 ppm Skin

**Ingredients with biological limit values:**

**872-50-4 N-methyl-2-pyrrolidone**

BEI (USA)	100 mg/L Medium: urine Time: end of shift Parameter: 5-Hydroxy-N-methyl-2-pyrrolidone
-----------	--

**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

## Safety Data Sheet

*according to HPR, Schedule 1*

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR

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**

<b>Physical state</b>	Liquid
<b>Color:</b>	Black
<b>Odor:</b>	Solvent-like
<b>Odor threshold:</b>	Not determined.
<b>Melting point/Melting range:</b>	Not determined.
<b>Boiling point/Boiling range:</b>	200 °C
<b>Flammability:</b>	Not determined.
<b>Explosion limits:</b>	
<b>Lower:</b>	1.3 Vol %
<b>Upper:</b>	9.5 Vol %
<b>Flash point:</b>	107.3 °C
<b>Auto-ignition temperature:</b>	270 °C
<b>Decomposition temperature:</b>	Not determined.
<b>pH-value at 20 °C:</b>	4-5
<b>Viscosity:</b>	
<b>Kinematic:</b>	Not determined.
<b>Dynamic:</b>	Not determined.
<b>Solubility in / Miscibility with</b>	
<b>Water:</b>	Fully miscible.
<b>Partition coefficient (n-octanol/water):</b>	Not determined.
<b>Vapor pressure:</b>	Not determined.
<b>Vapor pressure:</b>	
<b>Density at 20 °C:</b>	1.1 g/cm <sup>3</sup>
<b>Relative density</b>	Not determined.
<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 does not present an explosion hazard. Not determined.

**Flammability Limits:**

<b>Lower:</b>	Not Determined.
<b>Upper:</b>	Not Determined.
<b>Solids content:</b>	0.0 %
<b>Oxidizing properties</b>	Not determined.
<b>Evaporation rate</b>	Not determined.

**Safety Data Sheet**  
according to HPR, Schedule 1

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR

**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.

Acids

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

**11 Toxicological information**

**Information on toxicological effects**

**Acute toxicity:**

**LD/LC50 values that are relevant for classification:**

**122-99-6 2-Phenoxyethanol**

Oral	LD50	1,394 mg/kg (ATE) 1,260 mg/kg (Rat)
------	------	--

Dermal	LD50	5,000 mg/kg (rabbit)
--------	------	----------------------

**872-50-4 N-methyl-2-pyrrolidone**

Oral	LD50	3,914 mg/kg (Rat)
------	------	-------------------

Dermal	LD50	8,000 mg/kg (rabbit)
--------	------	----------------------

**Primary irritant effect:**

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

**on the eye:** Strong irritant with the danger of severe eye injury.

**Sensitization:** No sensitizing effects known.

**Reproductive toxicity** May damage fertility or the unborn child.

**Specific target organ toxicity - single exposure** May cause respiratory irritation.

**Additional toxicological information:**

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

Irritant

**Carcinogenic categories**

**IARC (International Agency for Research on Cancer)**

None of the ingredients are listed.

**NTP (National Toxicology Program)**

None of the ingredients are listed.

**12 Ecological information**

**Toxicity**

**Aquatic toxicity:** No further relevant information available.

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

**Bioaccumulative potential** Bioaccumulation is not expected.

**Safety Data Sheet**  
according to HPR, Schedule 1

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR

**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 1 (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.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

**13 Disposal considerations**

**Waste treatment methods**

**Recommendation:**

Disposal must be made in accordance with official regulations.

Do not allow product to reach sewage system.

**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.

**Recommended cleansing agent:** Water, if necessary with cleaning agents.

**14 Transport information**

**UN-Number**

DOT/TDG, ADR, IMDG, IATA Not applicable.

**UN proper shipping name**

DOT/TDG, ADR, IMDG, IATA Not applicable.

**Transport hazard class(es)**

DOT/TDG, ADR, ADN, IMDG, IATA  
Class Not applicable.

**Packing group**

DOT/TDG, ADR, IMDG, IATA Not applicable.

**Environmental hazards:** Not applicable.

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Special precautions for user** Not applicable.

**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):**

122-99-6	2-Phenoxyethanol
----------	------------------

**Safety Data Sheet**  
according to HPR, Schedule 1

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR

872-50-4	N-methyl-2-pyrrolidone
<b>USA - TSCA (Toxic Substances Control Act):</b>	
All components have the value ACTIVE.	
<b>Canadian Domestic Substances List (DSL)</b>	
122-99-6	2-Phenoxyethanol
872-50-4	N-methyl-2-pyrrolidone
<b>Canadian Non-Domestic Substances List (NDSL)</b>	
None of the ingredients are listed.	
<b>Canadian Ingredient Disclosure list (limit 0.1%)</b>	
None of the ingredients are listed.	
<b>Canadian Ingredient Disclosure list (limit 1%)</b>	
122-99-6	2-Phenoxyethanol
<b>Per- and polyfluoroalkyl substances (PFAS)</b>	
None of the ingredients are listed.	

**GHS label elements**

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

**Hazard pictograms**



GHS05 GHS07 GHS08

**Signal word** Danger

**Hazard-determining components of labeling:**

2-Phenoxyethanol  
N-methyl-2-pyrrolidone

**Hazard statements**

H315 Causes skin irritation.  
H318 Causes serious eye damage.  
H360 May damage fertility or the unborn child.  
H335 May cause respiratory irritation.

**Precautionary statements**

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.  
P302+P352 IF ON SKIN: Wash with plenty of water.  
P310 Immediately call a POISON CENTER/doctor.  
P321 Specific treatment (see on this label).  
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
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.  
P332+P313 If skin irritation occurs: 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** 12/10/2025

**Safety Data Sheet**  
*according to HPR, Schedule 1*

Date of issue 12/10/2025

Version number 1

Revision: 12/10/2025

**Trade name:** PEN-01, PEN-01IR, PEN-02, PEN-02IR, PEN-03, PEN-03IR, PEN-11, PEN-11IR, PEN-12, PEN-12IR

**Date of preparation** 12/10/2025

**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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent