

1 Identification of the substance/mixture and of the company

- **Product identifier**
- **Trade name:** Remover PG
- **Product number:** G050200
- **CAS Number:**
872-50-4
- **EC number:**
212-828-1
- **Index number:**
606-021-00-7
- **Application of the substance / the preparation** Photoresist
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
MicroChem Corp
90 Oak Street, PO Box 426
Newton, MA 02464-0002
- **Information department:**
Product Safety
Email: productsafety@microchem.com
- **Emergency telephone number:**
MicroChem Corp : 617-965-5511
Chemtrec USA Emergency : 800-424-9300
Chemtrec International Emergency : 703-527-3887

2 Composition/information on ingredients

- **Chemical characterization:** Substances
- **CAS No. Description**
872-50-4 N-methyl-2-pyrrolidone
- **Identification number(s)**
- **EC number:** 212-828-1
- **Index number:** 606-021-00-7

· **SVHC**

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

3 Hazards identification

- **Classification of the substance or mixture**



GHS08 Health hazard

H360 May damage fertility or the unborn child.



GHS07

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H227 Combustible liquid.

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

The substance is classified and labelled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

GHS07 GHS08

· **Signal word** Danger· **Hazard-determining components of labelling:**

N-methyl-2-pyrrolidone

· **Hazard statements**

H227 Combustible liquid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

H335 May cause respiratory irritation.

· **Precautionary statements**

P101 If medical advice is needed, have product container or label at hand.

P102 Keep out of reach of children.

P103 Read label before use.

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

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

P321 Specific treatment (see on this label).

P405 Store locked up.

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

· **Classification system:**· **NFPA ratings (scale 0 - 4)**

Health = 2

Fire = 1

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *2

Fire = 1

Reactivity = 0

4 First aid measures· **After inhalation:** Supply fresh air or oxygen; call for doctor.· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.· **After eye contact:**

Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

USA

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5 Firefighting measures

- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Protective equipment:** Wear SCBA.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **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.
- **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

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaust at the workplace.
Open and handle container with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep respirator available.
- **Storage:**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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

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

WEEL	10 ppm
	Skin

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from food and beverages.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.

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- **Respiratory equipment:**
In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**



Protective gloves

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

- **Material of gloves** Butyl rubber, BR
- **Penetration time of glove material** Contact glove manufacture for break-through time.
- **Eye protection:**



Tightly sealed goggles

9 Physical and chemical properties

· General Information

· Appearance:

Form: Fluid
Color: Colorless
Light yellow

· **Odor:** Amine-like
· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· Change in condition

Melting point/Melting range: -24°C (-11 °F)
Boiling point/Boiling range: 202°C (396 °F)

· **Flash point:** 93°C (199 °F)

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:** 270°C (518 °F)

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Not determined.

· Explosion limits:

Lower: 1.3 Vol %
Upper: 9.5 Vol %

· **Vapor pressure at 20°C (68 °F):** 0.3 hPa

· **Density at 20°C (68 °F):** 1.026 g/cm³ (8.562 lbs/gal)

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· Solubility in / Miscibility with

Water: Fully miscible.

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· Segregation coefficient (n-octanol/water): Not determined.

· Viscosity:

Dynamic: Not determined.

Kinematic: Not determined.

Organic solvents: 98.0 %

VOC content: 98.0 %

Solids content: 1.0 %

· Other information: No further relevant information available.

10 Stability and reactivity

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

· Incompatible materials: No further relevant information available.

· Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

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

Oral LD50 3914 mg/kg (rat)

Dermal LD50 8000 mg/kg (rabbit)

· Primary irritant effect:

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

· on the eye: Irritating effect.

· Sensitization: No sensitizing effects known.

12 Ecological information

· Aquatic toxicity: No further relevant information available.

· Persistence and degradability: No further relevant information available.

· Behavior in environmental systems:

· Bioaccumulative potential: No further relevant information available.

· Additional ecological information:

· General notes:

Water hazard class 1 (Assessment by list): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

· Waste treatment methods

· Recommendation:

Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.

· Uncleaned packagings:

· Recommendation: Disposal must be made in accordance with Federal, State, and Local regulations.

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· Recommended cleansing agent: Water, if necessary with cleansing agents.

14 Transport information

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

15 Regulatory information

· Sara	
· Section 355 (extremely hazardous substances):	
	Substance is not listed.
· Section 313 (Specific toxic chemical listings):	
872-50-4	N-methyl-2-pyrrolidone
· TSCA (Toxic Substances Control Act):	
	Substance is listed.
· Proposition 65	
· Chemicals known to cause cancer:	
	Substance is not listed.
· Chemicals known to cause reproductive toxicity for females:	
	Substance is not listed.
· Chemicals known to cause reproductive toxicity for males:	
	Substance is not listed.
· Chemicals known to cause developmental toxicity:	
872-50-4	N-methyl-2-pyrrolidone

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· Carcinogenic categories

· EPA (Environmental Protection Agency)

Substance is not listed.

· IARC (International Agency for Research on Cancer)

Substance is not listed.

· NTP (National Toxicology Program)

Substance is not listed.

· TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

· OSHA-Ca (Occupational Safety & Health Administration)

Substance is not listed.

· GHS label elements

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· Hazard pictograms



GHS07 GHS08

· Signal word Danger

· Hazard-determining components of labelling:

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· Hazard statements

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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.

· Department issuing MSDS: Product safety department

· Contact: Mr. Bedet

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Printing date 02/22/2012

Reviewed on 01/31/2012

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· Abbreviations and acronyms:

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

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

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

ICAO: International Civil Aviation Organization

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial 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

USA