

Safety Data Sheet

Version 1.3

Revision Date 03/22/2022

SDS Number 300000078637

Print Date 08/05/2022

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dynasolve® CU-7

Product Use Description : Polyimide Removal, Semiconductor Processing

Manufacturer/Importer/Distributor : Versum Materials US, LLC
8555 South River Parkway
Tempe, AZ 85284-2601
Exporter EIN No. 47-5632014
www.emdgroup.com/electronics

Telephone : 800 837 2724

Emergency telephone number (24h) : 1-800-424-9300
(+1) 703-741-5970 (CHEMTREC)

2. HAZARDS IDENTIFICATION

GHS classification

Flammable liquids - Category 4
Skin corrosion - Category 1C
Serious Eye Damage - Category 1
Reproductive toxicity - Category 1B

GHS label elements

Hazard pictograms/symbols



Signal Word: Danger

Hazard Statements:

H227: Combustible liquid
H314: Causes severe skin burns and eye damage.
H360: May damage fertility or the unborn child.

Precautionary Statements:

Safety Data Sheet

Version 1.3
Revision Date 03/22/2022

SDS Number 300000078637
Print Date 08/05/2022

- Prevention : P201:Obtain special instructions before use.
P202:Do not handle until all safety precautions have been read and understood.
P210:Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P264:Wash hands thoroughly after handling.
P280:Wear protective gloves/protective clothing/eye protection/face protection.
P281:Use personal protective equipment as required.
- Response : P301+P330+P331 :IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353 :IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 :IF INHALED: Remove victim to fresh air and keep at rest in a position 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.
P308+P313 :IF exposed or concerned: Get medical advice/attention.
P310 :Immediately call a POISON CENTRE/doctor.
P363 :Wash contaminated clothing before reuse.
P370+P378 :In case of fire, use recommended extinguishing media for extinction.
- Storage : P403+P235:Store in a well-ventilated place. Keep cool.
P405:Store locked up.
- Disposal : P501:Disposal of contents/container to be specified in accordance with regulations.

Hazards not otherwise classified

None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Concentration (Weight)
Methyl-2-pyrrolidinone, 1-	872-50-4	60% - 80 %
Diethyleneglycolamine	929-06-6	20% - 40 %

Concentration is nominal. For the exact product composition, please refer to technical specifications.

4. FIRST AID MEASURES

- General advice : Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
- Eye contact : Hold eyelids apart, initiate and maintain gentle and continuous irrigation care is

Safety Data Sheet

Version 1.3
Revision Date 03/22/2022

SDS Number 300000078637
Print Date 08/05/2022

not promptly available, continue to irrigate for one hour.

- Skin contact : Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Flush immediately with copious amounts of water. Initiate and maintain continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing.
- Ingestion : If a person vomits when lying on his back, place him in the recovery position. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.
- Inhalation : If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately. Move to fresh air.
- Most important symptoms/effects - acute and delayed : Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Eye disease. Skin disorders and Allergies. Asthma.

5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Alcohol-resistant foam.
Carbon dioxide (CO₂).
Dry chemical.
Dry sand.
Limestone powder.
- Specific hazards : Incomplete combustion may form carbon monoxide. May generate ammonia gas. May generate toxic nitrogen oxide gases. Flash back possible over considerable distance. In the event of fire, cool tanks with water spray. Fire or intense heat may cause violent rupture of packages. Burning produces noxious and toxic fumes. May form explosive mixtures in air. Downwind personnel must be evacuated.
- Special protective equipment for fire-fighters : Avoid contact with the skin. A face shield should be worn. Use personal protective equipment. Wear self contained breathing apparatus for fire fighting if necessary.
- Further information : Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations., Do not allow run-off from firefighting to enter drains or water courses.

6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions, Protective Equipment, and Emergency Procedures : Remove all sources of ignition. Use self-contained breathing apparatus and chemically protective clothing. Evacuate personnel to safe areas.
- Environmental precautions : Shut off or remove all ignition sources. Use appropriate containment to avoid

Safety Data Sheet

Version 1.3
Revision Date 03/22/2022

SDS Number 300000078637
Print Date 08/05/2022

environmental contamination. Do not allow spill to enter into sewers or waterways. Construct a dike to prevent spreading.

Methods for cleaning up : Absorb with inert absorbent materials such as: Dry sand. Vermiculite. Activated charcoal. Approach suspected leak areas with caution. Call Emergency Response number for advice. Place in appropriate chemical waste container.

Additional advice : If possible, stop flow of product.

7. HANDLING AND STORAGE

Handling

Use only in well-ventilated areas. Avoid contact with skin and eyes. Avoid breathing vapors and/or aerosols. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. See "Flammable and Combustible Liquid Code" NFPA No. 30, National Fire Protection Association, Boston, MA. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage

Do not store near acids. Keep away from heat and sources of ignition. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from oxidizers.

Technical measures/Precautions

Keep away from open flames, hot surfaces and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Provide readily accessible eye wash stations and safety showers.
Provide natural or explosion-proof ventilation adequate to ensure concentrations are kept below exposure limits.

Personal protective equipment

Respiratory protection : Wear appropriate respirator when ventilation is inadequate.

Hand protection : Butyl-rubber
Nitrile rubber.
Neoprene gloves.
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Full face shield with goggles underneath.

Skin and body protection : Impervious clothing.
Rubber or plastic boots.
Slicker Suit.

Safety Data Sheet

Version 1.3

Revision Date 03/22/2022

SDS Number 300000078637

Print Date 08/05/2022

- Environmental exposure controls : Shut off or remove all ignition sources. Use appropriate containment to avoid environmental contamination. Do not allow spill to enter into sewers or waterways.
- Special instructions for protection and hygiene : Discard contaminated leather articles. Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Wash hands at the end of each workshift and before eating, smoking or using the toilet. Launder or discard contaminated clothing. Provide readily accessible eye wash stations and safety showers.

Exposure limit(s)

Methyl-2-pyrrolidinone, 1-	Time Weighted Average (TWA): WEEL	10 ppm	40 mg/m3
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9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : Liquid. Colorless - Light yellow.
- Odor : Amine-like.
- Odor threshold : No data available.
- pH : < 12
- Melting point/range : No data available.
- Boiling point/range : 401 °F (205 °C)
- Flash point : 198 °F (92 °C) Pensky-Martens Closed Cup
- Evaporation rate : No data available.
- Flammability (solid, gas) : Not applicable.
- Upper/lower explosion/flammability limit : Not applicable.
- Vapor pressure : 0.30 mmHg
- Water solubility : Miscible with water.
- Relative vapor density : Not applicable.
- Relative density : 1.033 (water = 1)

Safety Data Sheet

Version 1.3
Revision Date 03/22/2022

SDS Number 300000078637
Print Date 08/05/2022

Partition coefficient: n-octanol/water [log Kow]	: No data available.
Auto-ignition temperature	: No data available.
Decomposition temperature	: No data available.
Viscosity	: No data available.
Density	: No data available. : 64.488 lb/ft3 (1.033 g/cm3)

10. STABILITY AND REACTIVITY

Chemical Stability	: Stable under normal conditions.
Conditions to avoid	: Heat, flames and sparks.
Materials to avoid	: Organic acids (i.e. acetic acid, citric acid etc.). Mineral acids. Oxidizing agents. Sodium hypochlorite. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces.
Hazardous decomposition products	: Hazardous combustion products: Nitric acid. Ammonia. Nitrogen oxides (NOx). Nitrogen oxide can react with water vapors to form corrosive nitric acid. Carbon monoxide. Carbon dioxide (CO2).
Possibility of hazardous Reactions/Reactivity	: No data available.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Likely routes of exposure

Effects on Eye	: Causes eye burns. May cause blindness.
Effects on Skin	: Causes skin burns.
Inhalation Effects	: Can cause severe eye, skin and respiratory tract burns. Risk of serious damage to the lungs (by inhalation). Inhalation of aerosol may cause irritation to the upper respiratory tract.

Safety Data Sheet

Version 1.3

Revision Date 03/22/2022

SDS Number 300000078637

Print Date 08/05/2022

- Ingestion Effects : If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.
- Symptoms : Repeated and/or prolonged exposure to low concentrations of vapors and/or aerosols may cause: Sore throat. Eye disease., Skin disorders and Allergies., Asthma.

Acute toxicity

Acute Oral Toxicity : No data is available on the product itself.

Acute Oral Toxicity - Components

Methyl-2-pyrrolidinone, 1-
Diethyleneglycolamine

LD50 : 4,150 mg/kg
LD50 : 3,400 mg/kg

Species : Rat male
Species : Rat

Inhalation : No data is available on the product itself.

Inhalation - Components

Methyl-2-pyrrolidinone, 1-

LC50 (4 h) : > 5.1 mg/l

Species : Rat male

Acute Dermal Toxicity : No data is available on the product itself.

Acute Dermal Toxicity - Components

Methyl-2-pyrrolidinone, 1-
Diethyleneglycolamine

LD50 : > 5,000 mg/kg
LD50 : > 3,000 mg/kg

Species : Rat male
Species : Rabbit

Skin corrosion/irritation : Causes skin burns.

Serious eye damage/eye irritation : Risk of serious damage to eyes.

Sensitization. : No data available.

Chronic toxicity or effects from long term exposures

Carcinogenicity : No data available.

Reproductive toxicity : 1-Methyl-2-Pyrrolidone has caused embryotoxic and teratogenic effects in laboratory animals.

Germ cell mutagenicity : No data is available on the product itself.

Specific target organ systemic toxicity (single exposure) : No data available.

Specific target organ systemic toxicity (repeated exposure) : No data available.

Aspiration hazard : No data available.

Safety Data Sheet

Version 1.3

Revision Date 03/22/2022

SDS Number 300000078637

Print Date 08/05/2022

Delayed and Immediate Effects and Chronic Effects from Short and Long Term Exposure

This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Reproductive toxin. Eye disease., Skin disorders and Allergies., Asthma.

12. ECOLOGICAL INFORMATION

Ecotoxicity effects

Aquatic toxicity : No data is available on the product itself.

Toxicity to fish - Components

Methyl-2-pyrrolidinone, 1-	LC50 (96 h) : 832 mg/l	Species : Bluegill (Lepomis macrochirus)
Methyl-2-pyrrolidinone, 1-	LC50 (96 h) : 4,000 mg/l	Species : Golden Orfe (Leuciscus Iodus L, Golden variety)

Toxicity to daphnia - Components

Methyl-2-pyrrolidinone, 1-	EC 50 (48 h) : > 4,000 mg/l	Species : Daphnia
Methyl-2-pyrrolidinone, 1-	NOEC (21 d) : 12.5 mg/l	Species : Daphnia magna

Toxicity to algae - Components

Methyl-2-pyrrolidinone, 1-	EC 50 (72 h) : 600.5 mg/l	Species : Algae (Pseudokirchneriella subcapitata)
Methyl-2-pyrrolidinone, 1-	NOEC (72 h) : 92.6 mg/l	Species : Algae (Pseudokirchneriella subcapitata)

Toxicity to other organisms : No data available.

Persistence and degradability

Biodegradability : No data is available on the product itself.

Mobility : No data available.

Bioaccumulation : No data is available on the product itself.

Bioaccumulation - Components

Methyl-2-pyrrolidinone, 1-	The product is not bioaccumulating.
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Safety Data Sheet

Version 1.3
Revision Date 03/22/2022

SDS Number 300000078637
Print Date 08/05/2022

13. DISPOSAL CONSIDERATIONS

- Waste from residues / unused products : The product should not be allowed to enter drains, water courses or the soil; dispose of this material and its container in a safe way. Waste from residues / unused products: do not discharge effluent containing this product into waterways or sewer systems without proper authorization. Contact supplier if guidance is required.
- Contaminated packaging : Dispose of container and unused contents in accordance with federal, state, and local requirements.

14. TRANSPORT INFORMATION

DOT

- UN/ID No. : UN3267
Proper shipping name : Corrosive liquid, basic, organic, n.o.s., (Diethyleneglycolamine)
Class or Division : 8
Packing group : III
Label(s) : 8
Marine Pollutant : No

IATA

- UN/ID No. : UN3267
Proper shipping name : Corrosive liquid, basic, organic, n.o.s., (Diethyleneglycolamine)
Class or Division : 8
Packing group : III
Label(s) : 8
Marine Pollutant : No

IMDG

- UN/ID No. : UN3267
Proper shipping name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S., (Diethyleneglycolamine)
Class or Division : 8
Packing group : III
Label(s) : 8
Marine Pollutant : No

TDG

- UN/ID No. : UN3267
Proper shipping name : CORROSIVE LIQUID, BASIC, ORGANIC, N.O.S., (Diethyleneglycolamine)
Class or Division : 8
Packing group : III
Label(s) : 8
Marine Pollutant : No

Further Information

Safety Data Sheet

Version 1.3
Revision Date 03/22/2022

SDS Number 300000078637
Print Date 08/05/2022

The transportation information is not intended to convey all specific regulatory data relating to this material. For complete transportation information, contact customer service.

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA) 12(b) Component(s):
Methyl-2-pyrrolidinone, 1-

Country	Regulatory list	Notification
USA	TSCA	Included on Inventory.
EU	EINECS	Included on EINECS inventory or polymer substance, monomers included on EINECS inventory or no longer polymer.
Canada	DSL	Included on Inventory.
Australia	AICS	Included on Inventory.
Japan	ENCS	Included on Inventory.
South Korea	ECL	Included on Inventory.
China	SEPA	Included on Inventory.
Philippines	PICCS	Included on Inventory.

EPA SARA Title III Section 312 (40 CFR 370) Hazard Classification
Fire Hazard. Acute Health Hazard Chronic Health Hazard

EPA SARA Title III Section 313 (40 CFR 372) Component(s) above 'de minimus' level
Methyl-2-pyrrolidinone, 1-

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
WARNING! This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.
Methyl-2-pyrrolidinone, 1-

16. OTHER INFORMATION

HMIS Rating

Health : 3*
Flammability : 2
Physical hazard : 0

Prepared by : Product Compliance Department

Telephone : 800 837 2724

Preparation Date : 08/05/2022

Safety Data Sheet

Version 1.3

Revision Date 03/22/2022

SDS Number 300000078637

Print Date 08/05/2022
