

SECTION 1: Identification

1.1. Identification

Product form : Mixture
 Trade name : ALBERDINGK® U 4040

1.2. Recommended use and restrictions on use

Use of the substance/mixture : binding agent
 Restrictions on use : No information available

1.3. Supplier

Supplier

ALBERDINGK BOLEY INC
 6008 West Gate City Boulevard
 Greensboro, NC 27407 - USA
 T +1-866-220-4750 - F 336-454-5007
Info@Alberdingkusa.com - www.alberdingkusa.com

1.4. Emergency telephone number

Emergency number : Emergency Contact (24-Hour Number): Chemtrec 1-800-424-9300 or 1-703-527-3887

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Skin corrosion/irritation Category 2 H315 Causes skin irritation
 Serious eye damage/eye irritation Category 2A H319 Causes serious eye irritation

Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) : Warning

Hazard statements (GHS US) : H315 - Causes skin irritation
 H319 - Causes serious eye irritation

Precautionary statements (GHS US) : P264 - Wash hands, forearms and face thoroughly after handling.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection.
 P302+P352 - If on skin: Wash with plenty of water.
 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 supplemental first aid instruction on this label).
 P332+P313 - If skin irritation occurs: Get medical advice/attention.
 P337+P313 - If eye irritation persists: Get medical advice/attention.
 P362+P364 - Take off contaminated clothing and wash it before reuse.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : Not classified as PBT or vPvB.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

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Name	Product identifier	%	GHS US classification
N-ethyl morpholine	(CAS-No.) 100-74-3	1.0 - 5.0	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Skin Corr. 1C, H314 Eye Dam. 1, H318

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. Allow affected person to breathe fresh air. Allow the victim to rest.
- First-aid measures after skin contact : Wash skin with plenty of water. Wash with plenty of soap and water. Get medical advice/attention. Wash contaminated clothing before reuse. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical advice/attention. Immediately call a poison center or doctor/physician. Call a physician immediately.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention. Call a poison center/doctor/physician if you feel unwell.

4.2. Most important symptoms and effects (acute and delayed)

- Potential Adverse human health effects and symptoms : Based on available data, the classification criteria are not met.
- Symptoms/effects after inhalation : May cause an allergic skin reaction.
- Symptoms/effects after skin contact : May cause an allergic skin reaction. Causes skin irritation. Irritation.
- Symptoms/effects after eye contact : Causes serious eye irritation. Eye irritation. Causes serious eye damage. Serious damage to eyes.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

- Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Special protective equipment and precautions for fire-fighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Ventilate spillage area. Evacuate unnecessary personnel. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal protection".
- Emergency procedures : Ventilate area.

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6.2. Environmental precautions

Avoid release to the environment. Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material. Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage. Store away from other materials.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection. For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Good ventilation of the workplace required.

Precautions for safe handling : Ensure good ventilation of the work station. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor. Avoid contact with skin and eyes. Wear personal protective equipment.

Handling temperature : 5 – 30 °C

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : No additional information available.

Storage conditions : Protect against frost. Keep container closed when not in use.

Incompatible products : Strong bases. Strong acids.

Incompatible materials : Sources of ignition.

Maximum storage period : 6 months from date on CoA

Storage temperature : 10 – 30 °C

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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No additional information available

N-ethyl morpholine (100-74-3)

USA - ACGIH - Occupational Exposure Limits

Local name	N-Ethylmorpholine
ACGIH TWA (mg/m ³)	24 mg/m ³ absorbed through the skin
ACGIH TWA (ppm)	5 ppm
Remark (ACGIH)	URT irr; eye dam

USA - OSHA - Occupational Exposure Limits

Local name	N-Ethylmorpholine
OSHA PEL (TWA) (mg/m ³)	94 mg/m ³
OSHA PEL (TWA) (ppm)	20 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Hand protection:

nitrile rubber gloves. Wear protective gloves. Protective gloves against chemicals (EN 374)

Eye protection:

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Chemical goggles or safety glasses. Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Wear appropriate mask

Personal protective equipment symbol(s):



Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: White to off-white
Odor	: characteristic
Odor threshold	: No data available
pH	: 7 – 8
Melting point	: 0 °C
Freezing point	: 0 °C
Boiling point	: 100 °C
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Non flammable.
Vapor pressure	: 2.3 kPa at RT
Relative vapor density at 20 °C	: No data available
Relative density	: No data available
Specific gravity / density	: 1 – 1.1 g/cm ³
Solubility	: Miscible with water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: 100 – 2000 mPa·s
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

Percent Solids : 44 – 46 %

SECTION 10: Stability and reactivity

10.1. Reactivity

No data available.

10.2. Chemical stability

Not established.

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10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Extremely high or low temperatures.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

No additional information.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

N-ethyl morpholine (100-74-3)	
LD50 oral rat	1110 mg/kg
LD50 dermal rabbit	1980 mg/kg
Skin corrosion/irritation	: Causes skin irritation. pH: 7 – 8
Serious eye damage/irritation	: Causes serious eye irritation. pH: 7 – 8
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/effects after inhalation	: May cause an allergic skin reaction.
Symptoms/effects after skin contact	: May cause an allergic skin reaction. Causes skin irritation. Irritation.
Symptoms/effects after eye contact	: Causes serious eye irritation. Eye irritation. Causes serious eye damage. Serious damage to eyes.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

N-ethyl morpholine (100-74-3)	
LC50 fish 1	277 mg/l (DIN 38412-15, 96 h, Leuciscus idus, Static system, Fresh water, Experimental value)
EC50 Daphnia 1	804 mg/l (48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 (algae)	291.2 mg/l (DIN 38412-9, 96 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

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Persistence and degradability	Not established.

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N-ethyl morpholine (100-74-3)	
Persistence and degradability	Not readily biodegradable in water.

12.3. Bioaccumulative potential

ALBERDINGK® U 4040	
Bioaccumulative potential	Not established.

N-ethyl morpholine (100-74-3)	
Partition coefficient n-octanol/water (Log Pow)	0.08 (Practical experience/observation, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 24.6 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

N-ethyl morpholine (100-74-3)	
Partition coefficient n-octanol/water (Log Koc)	0.85 – 1.13 (log Koc, QSAR)
Ecology - soil	Highly mobile in soil.

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Product/Packaging disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not applicable

Transportation of Dangerous Goods

Not applicable

Transport by sea

Not applicable

Air transport

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

Polymer Exempt (PE) on US TSCA (Toxic Substances Control Act) Inventory

15.2. International regulations

CANADA

ALBERDINGK® U 4040
Listed on the Canadian DSL (Domestic Substances List)

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N-ethyl morpholine (100-74-3)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

National regulations

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Simplified Notification (SN) on Chinese IECSC (Inventory of Existing Chemical Substances)

Exempt from listing on the AICS (Australian Inventory of Chemical Substances)

15.3. US State regulations

⚠ WARNING: This product can expose you to N-ethyl morpholine, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Component	State or local regulations
N-ethyl morpholine(100-74-3)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 05/11/2020

Other information : None.

Full text of H-phrases:

H226	Flammable liquid and vapour
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation

SDS US (GHS HazCom 2012)

Date of revision