



1 Identification

- **Product identifier**
- **Trade name:** ProChem® X-Bond
- **Article number:** X-Bond
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Chemical Consultants Inc.
1850 Wild Turkey Circle
Corona, CA 92878
USA
+1 (951) 735-5511
ncollins@ccidom.com
- **Information department:** Product safety department
- **Emergency telephone number:** INFOTRAC 1-800-535-5053

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS08 Health hazard

Toxic to Reproduction 1B

H360 May damage fertility or the unborn child.



GHS07

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.

Specific Target Organ Toxicity - Single Exposure 3 H335 May cause respiratory irritation.

Flammable Liquids 4

H227 Combustible liquid.

- **Label elements**

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

- **Hazard pictograms**



GHS07



GHS08

- **Signal word** Danger

- **Hazard-determining components of labeling:**

N-methyl-2-pyrrolidone

d-limonene

- **Hazard statements**

H227 Combustible liquid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H360 May damage fertility or the unborn child.

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H335 May cause respiratory irritation.

· **Precautionary statements**

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from flames and hot surfaces. – No smoking.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P264 Wash thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P302+P352 If on skin: Wash with plenty of water.
- 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.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P312 Call a poison center/doctor if you feel unwell.
- P321 Specific treatment (see on this label).
- 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.
- P363 Wash contaminated clothing before reuse.
- P370+P378 In case of fire: Use CO2, powder or water spray to extinguish.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **Other hazards**

· **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**

108-32-7	propylene carbonate	30-50%
67-68-5	dimethyl sulfoxide	15-30%
872-50-4	N-methyl-2-pyrrolidone	15-30%

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5989-27-5 d-limonene

1-5%

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:**
Supply fresh air.
In case of unconsciousness place patient stably in side position for transportation.
- **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:** If symptoms persist consult doctor.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **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.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** For large spills: 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 section 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.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

108-32-7	propylene carbonate	34 mg/m ³
67-68-5	dimethyl sulfoxide	150 ppm
872-50-4	N-methyl-2-pyrrolidone	30 ppm
5989-27-5	d-limonene	15 ppm
102-71-6	Triethanolamine	15 mg/m ³

· **PAC-2:**

108-32-7	propylene carbonate	370 mg/m ³
67-68-5	dimethyl sulfoxide	290 ppm

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872-50-4	N-methyl-2-pyrrolidone	32 ppm
5989-27-5	d-limonene	67 ppm
102-71-6	Triethanolamine	240 mg/m ³
· PAC-3:		
108-32-7	propylene carbonate	2,200 mg/m ³
67-68-5	dimethyl sulfoxide	1,800 ppm
872-50-4	N-methyl-2-pyrrolidone	190 ppm
5989-27-5	d-limonene	170 ppm
102-71-6	Triethanolamine	1,500 mg/m ³

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** Keep respiratory protective device available.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle 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 section 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**
The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
At this time, the other constituents have no known exposure limits.

67-68-5 dimethyl sulfoxide	
WEEL	Long-term value: 250 ppm
872-50-4 N-methyl-2-pyrrolidone	
TLV	BEI
WEEL	Long-term value: 10 ppm Skin

- **Ingredients with biological limit values:**

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

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- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**
 Keep away from foodstuffs, beverages and feed.
 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.
- **Breathing equipment:**
 Personal protective equipment should be selected based on an assessment of risk of exposure as uses and conditions of use vary and there is no single PPE scenario that fits all. There are chemicals in the blend that evaporate into the air and under conditions of large use volumes in combination with limited ventilation, respiratory protection may be warranted. Conditions where the worker uses the product in small amounts with local exhaust ventilation, protective gloves and eye protection may be sufficient to control exposure
- **Protection of hands:**



Protective gloves

The glove material has to 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

9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information**
- **Appearance:**

Form:	Fluid
Color:	According to product specification
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **pH-value:** Not determined.
- **Change in condition**

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	> 150 °C (> 302 °F)

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· Flash point:	71 °C (159.8 °F)
· Flammability (solid, gaseous):	Not applicable.
· Auto igniting:	270 °C (518 °F)
· Decomposition temperature:	Not determined.
· Ignition temperature:	Product is not selfigniting.
· Danger of explosion:	Not determined.
· Explosion limits:	
Lower:	1.3 Vol %
Upper:	63.0 Vol %
· Vapor pressure at 20 °C (68 °F):	2.5 hPa (1.9 mm Hg)
· Density at 20 °C (68 °F):	1.09 g/cm ³ (9.09605 lbs/gal)
· Relative density	Not determined.
· Vapor density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with Water:	Not miscible or difficult to mix.
· Partition coefficient (n-octanol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
VOC content:	703.0 g/l / 5.87 lb/gl
· Other information	No further relevant information available.

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:** No further relevant information available.
- **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:		
872-50-4 N-methyl-2-pyrrolidone		
Oral	LD50	3,914 mg/kg (rat)
Dermal	LD50	8,000 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.
- **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)		
5989-27-5	d-limonene	3
102-71-6	Triethanolamine	3

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

- **Toxicity**
- **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.
- **Mobility in soil** No further relevant information available.
- **Ecotoxic effects:**
- **Remark:** Toxic for fish
- **Additional ecological information:**
- **General notes:**
Also poisonous for fish and plankton in water bodies.
Toxic for aquatic organisms
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**
Dispose of content and/or container in accordance with local, regional, national and/or international regulations.
- **Uncleaned packagings:**
- **Recommendation:**
Dispose of content and/or container in accordance with local, regional, national and/or international regulations

US
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14 Transport information

· UN-Number	
· DOT, ADN, IMDG, IATA	not regulated
· UN proper shipping name	
· DOT, ADN, IMDG, IATA	not regulated
· Transport hazard class(es)	
· DOT, ADN, IMDG, IATA	
· Class	not regulated
· Packing group	
· DOT, IMDG, IATA	not regulated
· Environmental hazards:	
· Marine pollutant:	Yes
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	not regulated

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 is listed.		
· Section 313 (Specific toxic chemical listings):		
872-50-4	N-methyl-2-pyrrolidone	
· TSCA (Toxic Substances Control Act):		
All ingredients are listed.		
· Hazardous Air Pollutants		
None of the ingredients is listed.		
· Proposition 65		
· Chemicals known to cause cancer:		
None of the ingredients is listed.		
· Chemicals known to cause reproductive toxicity for females:		
None of the ingredients is listed.		
· Chemicals known to cause reproductive toxicity for males:		
None of the ingredients is listed.		
· Chemicals known to cause developmental toxicity:		
872-50-4	N-methyl-2-pyrrolidone	
· New Jersey Special Hazardous Substance List:		
67-68-5	dimethyl sulfoxide	TE, F2
872-50-4	N-methyl-2-pyrrolidone	TE, F2

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· **Pennsylvania Right-to-Know List:**

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

105-45-3 methyl acetoacetate

102-71-6 Triethanolamine

· **Pennsylvania Special Hazardous Substance List:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value)**

None of the ingredients is listed.

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

None of the ingredients is listed.

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

· **Hazard pictograms**



GHS07 GHS08

· **Signal word** Danger

· **Hazard-determining components of labeling:**

N-methyl-2-pyrrolidone

d-limonene

· **Hazard statements**

H227 Combustible liquid.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H360 May damage fertility or the unborn child.

H335 May cause respiratory irritation.

· **Precautionary statements**

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from flames and hot surfaces. – No smoking.

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

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing must not be allowed out of the workplace.

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

P302+P352 If on skin: Wash with plenty of water.

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.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P312 Call a poison center/doctor if you feel unwell.

P321 Specific treatment (see on this label).

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

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

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P337+P313 If eye irritation persists: Get medical advice/attention.
P363 Wash contaminated clothing before reuse.
P370+P378 In case of fire: Use CO₂, powder or water spray to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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 SDS:** Environment protection department.

· **Contact:** Mr. Collins

· **Date of preparation / last revision** 09/29/2023

· **Abbreviations and acronyms:**

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

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Flammable Liquids 4: Flammable liquids – 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

Toxic to Reproduction 1B: Reproductive toxicity – Category 1B

Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3