

## RHEOBYK-411

Version 1.1  
SDS\_NZ

Revision Date: 14.04.2026

Date of last issue: 20.01.2025  
Print Date 15.04.2026**Section 1: Identification**

Product name : RHEOBYK-411  
Product code : 000000000000129986

**Manufacturer or supplier's details**

Company : BYK-Chemie GmbH  
Address : Abelstrasse 45  
46483 Wesel  
Telephone : +49 281 670-23532  
Telefax : +49 281 670-23533  
E-mail address : GHS.BYK@altana.com  
Emergency telephone number : 0800 446 881 (toll-free number, access from New Zealand only)  
+64 9 929 1483

**Importer**

Company : Alchemy Agencies Ltd  
Level 2, 20 Centre St  
Freemans Bay  
Auckland 1010 NZ  
Tel: +64(0)93770613

Use of the Substance/Mixture : Rheology Additive

**Section 2: Hazard identification****GHS Classification**

Flammable liquids : Category 4  
Skin corrosion/irritation : Category 2  
Serious eye damage/eye irritation : Category 2  
Reproductive toxicity : Category 1  
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

**GHS label elements**

Hazard pictograms : 

Signal word : Danger

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Hazard statements	:	H227 Combustible liquid. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H360 May damage fertility or the unborn child.
Precautionary statements	:	<b>Prevention:</b> 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. P261 Avoid breathing mist or vapours. P264 Wash skin 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. <b>Response:</b> P302 + P352 IF ON SKIN: Wash with plenty of water. P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell. 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. 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. P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish. <b>Storage:</b> P403 + P233 Store in a well-ventilated place. Keep container tightly closed. P405 Store locked up. <b>Disposal:</b> P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards which do not result in classification**

None known.

**Section 3: Composition/information on ingredients**

Substance / Mixture	:	Mixture
Chemical nature	:	Solution of a modified urea

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**Components**

Chemical name	CAS-No.	Concentration (% w/w)
N-methyl-2-pyrrolidone	872-50-4	>= 50 -<= 100
lithium chloride	7447-41-8	>= 1 -< 3
Pyrrolidinone, dimethyl-	60544-40-3	>= 0.25 -< 0.5

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**Section 4: First-aid measures**

General advice	:	Move out of dangerous area. Show this safety data sheet to the doctor in attendance. Do not leave the victim unattended.
If inhaled	:	If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Induce vomiting immediately and call a physician. Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	:	No information available. Causes skin irritation. Causes serious eye irritation. May cause respiratory irritation. May damage fertility or the unborn child.
Notes to physician	:	No information available.

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**Section 5: Fire-fighting measures**

Suitable extinguishing media	:	Carbon dioxide (CO <sub>2</sub> )  Water mist  Carbon dioxide (CO <sub>2</sub> ) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NO <sub>x</sub> ) Halogenated compounds Metal oxides Hydrogen chloride

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- Specific extinguishing methods : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.  
For safety reasons in case of fire, cans should be stored separately in closed containments.  
Use a water spray to cool fully closed containers.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.
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**Section 6: Accidental release measures**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).  
Keep in suitable, closed containers for disposal.
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**Section 7: Handling and storage**

- Advice on protection against fire and explosion : Do not spray on a naked flame or any incandescent material.  
Keep away from open flames, hot surfaces and sources of ignition.
- Advice on safe handling : Avoid formation of aerosol.  
Do not breathe vapours/dust.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Provide sufficient air exchange and/or exhaust in work rooms.  
Dispose of rinse water in accordance with local and national regulations.
- Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.
- Conditions for safe storage : No smoking.  
Keep container tightly closed in a dry and well-ventilated place.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

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Further information on storage stability : No decomposition if stored and applied as directed.

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**Section 8: Exposure controls/personal protection**
**Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
N-methyl-2-pyrrolidone	872-50-4	WES-TWA	10 ppm 40 mg/m <sup>3</sup>	NZ OEL
Further information: Skin absorption				
		WES-STEL	20 ppm 80 mg/m <sup>3</sup>	NZ OEL
Further information: Skin absorption				

**Biological occupational exposure limits**

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
N-methyl-2-pyrrolidone	872-50-4	5-Hydroxy-N-methyl-2-pyrrolidone	Urine	End of shift (As soon as possible after exposure ceases)	100 mg/l	ACGIH BEI

**Personal protective equipment**

Respiratory protection : In the case of vapour formation use a respirator with an approved filter.

Hand protection

Material : butyl-rubber  
Break through time : 120.00 min

Remarks

Eye protection

: Wear suitable gloves.  
: Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection

: Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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**Section 9: Physical and chemical properties**

Appearance : liquid  
Colour : light yellow  
Odour : not significant  
Odour Threshold : No data available

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pH	:	5 (20 °C) Concentration: 1 % Method: Universal pH-value indicator
Melting point/ range	:	< 0 °C Method: derived
Initial boiling point	:	203.00 °C Method: derived
Flash point	:	91.00 °C  Method: 49 (Pensky-Martens)
Evaporation rate	:	No data available
Flammability (liquids)	:	Sustains combustion
Upper explosion limit / Upper flammability limit	:	9.50 %(V)
Lower explosion limit / Lower flammability limit	:	1.30 %(V)
Vapour pressure	:	< 0.5000000 hPa (20.00 °C) Method: derived
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.0500 g/cm <sup>3</sup> (20.00 °C) Method: 4 (20°C oscillating U-tube)
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	immiscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	> 200 °C Method: M0062 (Analytics Wesel)
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available

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**Section 10: Stability and reactivity**

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Reactivity	:	No decomposition if stored and applied as directed.
Chemical stability	:	No decomposition if stored and applied as directed.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Acids Strong oxidizing agents Alkalis
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

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**Section 11: Toxicological information****Acute toxicity**

Not classified due to lack of data.

**Product:**

Acute oral toxicity : Acute toxicity estimate: > 2,000 mg/kg  
Method: Calculation method

Acute dermal toxicity : Remarks: No data available

**Components:****N-methyl-2-pyrrolidone:**

Acute oral toxicity : LD50 (Rat): 4,150 mg/kg  
Method: OECD Test Guideline 401  
GLP: no

Acute inhalation toxicity : LC50 (Rat): > 5.1 mg/l  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes

Acute dermal toxicity : LD50 (Rat): > 5,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: No information available.

**lithium chloride:**

Acute oral toxicity : LD50 (Rat): 526 mg/kg  
GLP: No information available.

Acute inhalation toxicity : LC50 (Rat): > 5.57 mg/l  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403  
GLP: yes

Acute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes

**Skin corrosion/irritation**

Causes skin irritation.

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May cause skin irritation in susceptible persons.**Components:****N-methyl-2-pyrrolidone:**Species : Rabbit  
Method : OECD Test Guideline 404  
Result : slight irritation  
GLP : yes**Serious eye damage/eye irritation**

Causes serious eye irritation.

**Product:**

Remarks : Causes serious eye irritation.

**Components:****N-methyl-2-pyrrolidone:**Species : Rabbit  
Result : Severe eye irritation  
Method : OECD Test Guideline 405  
GLP : no**lithium chloride:**Species : Rabbit  
Result : Severe eye irritation  
Method : OECD Test Guideline 405  
GLP : yes**Respiratory or skin sensitisation****Skin sensitisation**

Not classified due to lack of data.

**Respiratory sensitisation**

Not classified due to lack of data.

**Product:**

Remarks : No data available

**Components:****N-methyl-2-pyrrolidone:**Test Type : Mouse Local Lymph Node assay (LLNA)  
Exposure routes : Skin contact  
Species : Mouse  
Method : OECD Test Guideline 429  
Result : Not a skin sensitizer.  
GLP : yes

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Test Type : Buehler Test  
Exposure routes : Skin contact  
Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Did not cause sensitisation on laboratory animals.  
GLP : yes

**Chronic toxicity****Germ cell mutagenicity**

Not classified due to lack of data.

**Product:**

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Result: No data available

**Carcinogenicity**

Not classified due to lack of data.

**Product:**

Remarks : No data available

**Reproductive toxicity**

May damage fertility or the unborn child.

**Product:**

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

Reproductive toxicity - Assessment : May damage the unborn child.

**STOT - single exposure**

May cause respiratory irritation.

**Product:**

Remarks : No data available

**STOT - repeated exposure**

Not classified due to lack of data.

**Product:**

Remarks : No data available

**Aspiration toxicity**

Not classified due to lack of data.

**Product:**

No data available

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**Further information****Product:**

Remarks : No data available

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**Section 12: Ecological information****Ecotoxicity****Product:**

Toxicity to fish : Remarks: No data available

Toxicity to algae/aquatic plants :  
Remarks: No data available**Components:****N-methyl-2-pyrrolidone:**Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 500 mg/l  
Exposure time: 96 h  
Test Type: static test  
GLP: noToxicity to algae/aquatic plants : (Scenedesmus subspicatus): > 500 mg/l  
Exposure time: 72 h  
GLP: noToxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 12.5 mg/l  
Exposure time: 21 d  
Test Type: semi-static test  
Method: OECD Test Guideline 211  
GLP: yes**lithium chloride:**Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 158 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
GLP: yesToxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 249 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
GLP: yesNOEC (Daphnia magna (Water flea)): 63.4 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
GLP: yesToxicity to algae/aquatic plants : (Desmodesmus subspicatus (green algae)): > 400 mg/l  
Exposure time: 72 h

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GLP: yes**Persistence and degradability****Product:**

Biodegradability : Remarks: No data available

**Components:****N-methyl-2-pyrrolidone:**Biodegradability : Result: Readily biodegradable.  
Method: OECD Test Guideline 301C  
GLP: No information available.**Bioaccumulative potential****Product:**

Bioaccumulation : Remarks: No data available

**Components:****N-methyl-2-pyrrolidone:**Partition coefficient: n-  
octanol/water : log Pow: -0.46 (25 °C)  
Method: OECD Test Guideline 107  
GLP: no**Mobility in soil**

No data available

**Other adverse effects****Product:**Additional ecological  
information : No data available**Section 13: Disposal considerations****Disposal methods**Waste from residues : Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with  
chemical or used container.  
Send to a licensed waste management company.  
Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.  
Do not burn, or use a cutting torch on, the empty drum.**Section 14: Transport information****International Regulations**

UNRTDG

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UN number : Not applicable  
 Proper shipping name : Not applicable  
 Class : Not applicable  
 Subsidiary risk : Not applicable  
 Packing group : Not applicable  
 Labels : Not applicable  
 Environmentally hazardous : no

**IATA-DGR**

UN/ID No. : Not applicable  
 Proper shipping name : Not applicable  
 Class : Not applicable  
 Subsidiary risk : Not applicable  
 Packing group : Not applicable  
 Labels : Not applicable  
 Packing instruction (cargo aircraft) : Not applicable  
 Packing instruction (passenger aircraft) : Not applicable

**IMDG-Code**

UN number : Not applicable  
 Proper shipping name : Not applicable  
 Class : Not applicable  
 Subsidiary risk : Not applicable  
 Packing group : Not applicable  
 Labels : Not applicable  
 EmS Code : Not applicable  
 Marine pollutant : Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**National Regulations****NZS 5433**

UN number : Not applicable  
 Proper shipping name : Not applicable  
 Class : Not applicable  
 Subsidiary risk : Not applicable  
 Packing group : Not applicable  
 Labels : Not applicable  
 Hazchem Code : Not applicable

**Special precautions for user**

Not applicable

**Section 15: Regulatory information****Safety, health and environmental regulations/legislation specific for the substance or mixture****HSNO Approval Number**

HSR002490 Additives Process Chemicals and Raw Materials Combustible Group Standard

Tolerable Exposure Limits (TEL)

Chemical name	Environmental compartment	Reference concentration
2-Pyrrolidinone, 1-methyl-	Air	0.4 mg/m <sup>3</sup>

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	Drinking Water	0.375 mg/l
	Skin/Surface Deposition	0.83 mg/m <sup>2</sup>

Environmental Exposure Limits (EEL)

Not applicable

#### HSW Controls

Certified handler certificate not required.

Tracking hazardous substance not required.

Refer to the Health and Safety at Work (Hazardous Substances) Regulations 2017, for further information.

#### Section 16: Other information

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#### Full text of other abbreviations

ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)  
NZ OEL : New Zealand. Workplace Exposure Standards for Atmospheric Contaminants

NZ OEL / WES-TWA : Workplace Exposure Standard - Time Weighted average  
NZ OEL / WES-STEL : Workplace Exposure Standard - Short-Term Exposure Limit

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MERCOSUR - The Agreement for the Facilitation of the Transport of Dangerous Goods; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United

# SAFETY DATA SHEET



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Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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