

**RHEOBYK-420**

Product code: 000000000000129989

Version 5.0 SDS\_APJ\_MY

Revision Date 11.11.2022

Print Date 09.08.2023

**SECTION 1: Identification of the hazardous chemical and of the supplier****Product identifier**

Product name : RHEOBYK-420  
Recommended use : Rheology Additive

**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 : +60 3 6207 4347 (Malay and English)  
+65 3158 1074 (All languages)

**SECTION 2: Hazards identification****Classification of the hazardous chemical**

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

**Label elements**

Hazard pictograms : 

Signal word : Danger

Hazard statements : H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H335 May cause respiratory irritation.  
H360D May damage the unborn child.

Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
P264 Wash skin thoroughly after handling.

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P280 Wear protective gloves/ eye protection/ face protection.  
P281 Use personal protective equipment as required.

**Response:**

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

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

None known.

### SECTION 3: Composition and information of the ingredients of the hazardous chemical

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

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
N-methyl-2-pyrrolidone	872-50-4	>= 30 -< 50
lithium chloride	7447-41-8	>= 1 -< 3
Pyrrolidinone, dimethyl-	60544-40-3	>= 0.1 -< 0.25

### 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 : Clean mouth with water and drink afterwards plenty of water.  
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.  
No information available.

Notes to physician : No information available.

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**SECTION 5: Firefighting measures****Extinguishing media**

Suitable extinguishing media : Foam  
Carbon dioxide (CO<sub>2</sub>)  
Dry chemical

Unsuitable extinguishing media : High volume water jet

**Physicochemical hazards arising from the chemical**

Hazardous combustion products : Carbon oxides  
Nitrogen oxides (NO<sub>x</sub>)  
Halogenated compounds  
Metal oxides  
Hydrogen chloride

**Special protective equipment and precautions for fire-fighters**

Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

Specific extinguishing methods : Standard procedure for chemical fires.  
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**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 : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.

**SECTION 7: Handling and storage****Handling****Precautions for safe handling**

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : Avoid formation of aerosol.

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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.

### Storage

#### Conditions for safe storage, including any incompatibilities

Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
 Electrical installations / working materials must comply with the technological safety standards.

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

## SECTION 8: Exposure controls and personal protection

### Control parameters

Contains no substances with occupational exposure limit values.

### 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

### Individual protection measures, such as personal protective equipment

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

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

Hand protection  
 Material : butyl-rubber  
 Break through time : > 480 min  
 Glove thickness : 0.7 mm

Remarks : Wear suitable gloves.

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- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.
- Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

**SECTION 9: Physical and chemical properties**

- Appearance : liquid
- Colour : light yellow
- Odour : not significant
- Odour Threshold : No data available
- pH : 5 (20 °C)  
Concentration: 10 %  
Method: Universal pH-value indicator
- Melting point/range : No data available
- Initial boiling point : 203.00 °C  
Method: derived
- Flash point : 95 °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 : < 1 hPa (20.00 °C)  
Method: derived
- Relative vapour density : No data available
- Relative density : No data available
- Density : 1.1200 g/cm<sup>3</sup> (20.00 °C)  
Method: 4 (20°C oscillating U-tube)
- Solubility(ies)

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Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Auto-ignition temperature	:	> 200 °C Method: calculated
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**

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.
Conditions to avoid	:	No data available
Incompatible materials	:	Acids Strong oxidizing agents
Hazardous decomposition products	:	No decomposition if stored and applied as directed.

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**SECTION 11: Toxicological information**

Information on likely routes of exposure : None known.

**Acute toxicity****Product:**

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

**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

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Method: OECD Test Guideline 403  
GLP: yesAcute 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: yesAcute dermal toxicity : LD50 (Rat): > 2,000 mg/kg  
Method: OECD Test Guideline 402  
GLP: yes**Skin corrosion/irritation****Product:**Remarks : May irritate skin.  
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****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

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**Respiratory or skin sensitisation****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

**lithium chloride:**

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

**Germ cell mutagenicity****Product:**

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

**Carcinogenicity****Product:**

Remarks : No data available

**Reproductive toxicity****Product:**

Effects on fertility : Remarks: No data available

**STOT - single exposure****Product:**

Assessment : May cause respiratory irritation.

**STOT - repeated exposure****Product:**

Remarks : No data available

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**Repeated dose toxicity****Product:**

Remarks : No data available

**Aspiration toxicity****Product:**

No data available

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

Remarks : No data available

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**SECTION 12: Ecological information****Ecotoxicity****Product:**Toxicity to fish :  
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: yes

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NOEC (Daphnia magna (Water flea)): 63.4 mg/l  
Exposure time: 48 h  
Method: OECD Test Guideline 202  
GLP: yes

Toxicity to algae/aquatic plants : (Desmodesmus subspicatus (green algae)): > 400 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
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

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**SECTION 13: Disposal information****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.

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Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

**SECTION 14: Transport information****International Regulations****UNRTDG**

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

**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.

**Special precautions for user**

Not applicable

**SECTION 15: Regulatory information****Safety, health, and environmental regulations specific for the hazardous chemical**

Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013.

Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2000.

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**SECTION 16: Other information**

Date format : dd.mm.yyyy

**Full text of other abbreviations**

ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)

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 Harmonized 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 Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; 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; 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 - Organization 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 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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