

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006, as amended by
Commission Regulation (EU) 2020/878



BYK-MAX AF 4160

Version: 8.0
SDB_CH

Revision Date: 10.10.2025

Date of last issue: 18.10.2024
Print Date: 14.10.2025

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : BYK-MAX AF 4160
UFI : 42K5-Q05T-A00J-M12Q
Product code : 000000000000131529

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Anti-fogging agent

1.3 Details of the supplier of the safety data sheet

Company : BYK Netherlands BV
Danzigweg 23
7418 EN Deventer
Telephone : +31 881 220 300
Information : Regulatory Affairs
Telephone : +49 281 670-23532
Telefax : +49 281 670-23533
E-mail address : GHS.BYK@altana.com

1.4 Emergency telephone

+44 1235 239670

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2	H315: Causes skin irritation.
Eye irritation, Category 2	H319: Causes serious eye irritation.
Long-term (chronic) aquatic hazard, Category 3	H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal Word : Warning

Hazard Statements : H315 Causes skin irritation.

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H319 Causes serious eye irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements : **Prevention:**

P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

Response:

P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Chemical nature : Additive concentrate

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol	95-38-5 202-414-9	Acute Tox. 4; H302 Skin Corr. 1C; H314 STOT RE 2; H373 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	>= 1 - < 2,5

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		M-Factor (Acute aquatic toxicity): 10 M-Factor (Chronic aquatic toxicity): 1	
vinyl acetate	108-05-4 203-545-4	Flam. Liq. 2; H225 Acute Tox. 4; H332 Carc. 2; H351 STOT SE 3; H335 (Respiratory system) Aquatic Chronic 3; H412	$\geq 0,25 - < 0,5$
2-ethylhexanoic acid and its salts	3164-85-0 221-625-7	Skin Irrit. 2; H315 Eye Dam. 1; H318 Repr. 1B; H360D	$\geq 0,1 - < 0,25$

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

- General advice : Move out of dangerous area.
Show this material 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 : 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.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No information available.
- Risks : Causes skin irritation.
Causes serious eye irritation.

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4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Foam
Carbon dioxide (CO₂)
Dry chemical

Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire fighting : Fire will produce dense black smoke containing hazardous combustion products (see section 10).

Do not allow run-off from fire fighting to enter drains or water courses.

5.3 Advice for firefighters

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

Further information : 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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.
Avoid dust formation.
Avoid breathing dust.

6.2 Environmental precautions

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.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Keep in suitable, closed containers for disposal.

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6.4 Reference to other sections

For disposal considerations see section 13., For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Advice on safe handling : Avoid formation of respirable particles.
Do not breathe vapors/dust.
Avoid contact with skin and eyes.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Dispose of rinse water in accordance with local and national regulations.
- Advice on protection against fire and explosion : Avoid dust formation. Provide appropriate exhaust ventilation at places where dust is formed.
- Hygiene measures : When using do not eat or drink. When using do not smoke.
Wash hands before breaks and at the end of workday.

7.2 Conditions for safe storage, including any incompatibilities

- Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the technological safety standards.
- Further information on storage stability : No decomposition if stored and applied as directed.

7.3 Specific end use(s)

- Specific use(s) : No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
vinyl acetate	108-05-4	TWA	10 ppm 35 mg/m ³	CH SUVA
	Further information: Carcinogenic Category 3, National Institute for Occupational Safety and Health, National Institute of Research and Safety for the prevention of work accidents and occupational diseases			
		STEL	10 ppm 35 mg/m ³	CH SUVA
	Further information: Carcinogenic Category 3, National Institute for Occupational Safety and Health, National Institute of Research and Safety for the prevention of work accidents and occupational diseases			
		TWA	5 ppm	2009/161/EU

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			17,6 mg/m ³	
Further information: Indicative				
		STEL	10 ppm 35,2 mg/m ³	2009/161/EU
Further information: Indicative				

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006

Substance name	End Use	Routes of exposure	Potential health effects	Value
vinyl acetate	Workers	Inhalation	Acute systemic effects	35,2 mg/m ³
	Workers	Inhalation	Acute local effects	35,2 mg/m ³
	Workers	Dermal	Long-term systemic effects	0,42 mg/kg
	Workers	Inhalation	Long-term systemic effects	17,6 mg/m ³
	Workers	Inhalation	Long-term local effects	17,6 mg/m ³

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006

Substance name	Environmental Compartment	Value
vinyl acetate	Fresh water	0,016 mg/l
	Sea water	0,0016 mg/l
	Intermittent releases	0,126 mg/l
	Fresh water sediment	0,067 mg/kg
	Sea sediment	0,0067 mg/kg
	Soil	0,0035 mg/kg
	Sewage treatment plant	6 mg/l

8.2 Exposure controls

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.

Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

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

Environmental exposure controls

General advice : 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.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

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Physical state	:	pellet
Color	:	white
Odor	:	characteristic
Odor Threshold	:	Not applicable
Melting point/ range	:	No data available
	:	Not applicable
Flammability	:	Combustible Solids
Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Flash point	:	Not applicable
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available
pH	:	7 (20 °C) Concentration: 1 %
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Solubility(ies)		
Water solubility	:	insoluble
Solubility in other solvents	:	insoluble
Vapor pressure	:	Not applicable
Relative density	:	No data available
Density	:	0,92 g/cm ³ (20 °C, 1.013 hPa) Method: measured
Bulk density	:	430 - 560 kg/m ³ Method: 34 (bulk density)
Relative vapor density	:	Not applicable

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9.2 Other information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

No decomposition if stored and applied as directed.

10.2 Chemical stability

No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions

Hazardous reactions : No decomposition if stored and applied as directed.

10.4 Conditions to avoid

Conditions to avoid : No data available

10.5 Incompatible materials

Materials to avoid : None known.

10.6 Hazardous decomposition products

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Not classified due to lack of data.

Product:

Acute oral toxicity : Acute toxicity estimate: > 2.000 mg/kg
Method: Calculation method

Components:

vinyl acetate:

Acute dermal toxicity : LD50 (Rabbit): 7.440 mg/kg
GLP: no

Skin corrosion/irritation

Causes skin irritation.

Product:

Remarks : May irritate skin.
May cause skin irritation in susceptible persons.

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Components:

vinyl acetate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation
GLP : yes

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks : Causes serious eye irritation.

Components:

vinyl acetate:

Species : Rabbit
Method : OECD Test Guideline 405
Result : No eye irritation
GLP : yes

Respiratory or skin sensitization

Skin sensitization

Not classified due to lack of data.

Respiratory sensitization

Not classified due to lack of data.

Components:

vinyl acetate:

Test Type : Mouse Local Lymph Node assay (LLNA)
Routes of exposure : Skin contact
Species : Mouse
Method : OECD Test Guideline 429
Result : Not a skin sensitizer.
GLP : yes

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.

Reproductive toxicity

Not classified due to lack of data.

STOT-single exposure

Not classified due to lack of data.

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STOT-repeated exposure

Not classified due to lack of data.

Aspiration toxicity

Not classified due to lack of data.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Further information

Product:

Remarks : No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Components:

2-(2-heptadec-8-enyl-2-imidazolin-1-yl)ethanol:

M-Factor (Acute aquatic toxicity) : 10

M-Factor (Chronic aquatic toxicity) : 1

vinyl acetate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 12,6 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : (Pseudokirchneriella subcapitata (green algae)): 12,7 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

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12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data available

Components:

vinyl acetate:

Partition coefficient: n-octanol/water : log Pow: 0,73 (20 °C)
pH: 7
GLP: No information available.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

Product:

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

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-
- | | | |
|------------------------|---|--|
| Product | : | The product should not be allowed to enter drains, water courses or the soil.
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. |
-

SECTION 14: Transport information

14.1 UN number or ID number

- | | | |
|------|---|-----------------------------------|
| ADN | : | Not regulated as a dangerous good |
| ADR | : | Not regulated as a dangerous good |
| RID | : | Not regulated as a dangerous good |
| IMDG | : | Not regulated as a dangerous good |
| IATA | : | Not regulated as a dangerous good |

14.2 UN proper shipping name

- | | | |
|------|---|-----------------------------------|
| ADN | : | Not regulated as a dangerous good |
| ADR | : | Not regulated as a dangerous good |
| RID | : | Not regulated as a dangerous good |
| IMDG | : | Not regulated as a dangerous good |
| IATA | : | Not regulated as a dangerous good |

14.3 Transport hazard class(es)

- | | | |
|------|---|-----------------------------------|
| ADN | : | Not regulated as a dangerous good |
| ADR | : | Not regulated as a dangerous good |
| RID | : | Not regulated as a dangerous good |
| IMDG | : | Not regulated as a dangerous good |
| IATA | : | Not regulated as a dangerous good |

14.4 Packing group

- | | | |
|------------------|---|-----------------------------------|
| ADN | : | Not regulated as a dangerous good |
| ADR | : | Not regulated as a dangerous good |
| RID | : | Not regulated as a dangerous good |
| IMDG | : | Not regulated as a dangerous good |
| IATA (Cargo) | : | Not regulated as a dangerous good |
| IATA (Passenger) | : | Not regulated as a dangerous good |

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14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

: Conditions of restriction for the following entries should be considered:
Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII)

Number on list 78:

Polymers of ethylene, in primary forms, Polymers of vinyl acetate or of other vinyl esters, in primary forms; other vinyl polymers in primary forms

synthetic polymer microparticles (SPM) content: 70 - 80 %

The synthetic polymer microparticles supplied is subject to conditions laid down by entry 78 of Annex XVII to Regulation (EC) No 1907/2006 of the European Parliament and of the Council

REACH - Candidate List of Substances of Very High Concern for Authorization (Article 59).

: This product does not contain substances of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation (Annex XIV)

: Not applicable

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

Not applicable

Volatile organic compounds : Law on the incentive tax for volatile organic compounds (VOCV)
no VOC duties

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15.2 Chemical Safety Assessment

Not applicable

SECTION 16: Other information

Items where relevant changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

Full text of H-Statements

H225	: Highly flammable liquid and vapor.
H302	: Harmful if swallowed.
H314	: Causes severe skin burns and eye damage.
H315	: Causes skin irritation.
H318	: Causes serious eye damage.
H332	: Harmful if inhaled.
H335	: May cause respiratory irritation.
H351	: Suspected of causing cancer.
H360D	: May damage the unborn child.
H373	: May cause damage to organs through prolonged or repeated exposure.
H400	: Very toxic to aquatic life.
H410	: Very toxic to aquatic life with long lasting effects.
H412	: Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox.	: Acute toxicity
Aquatic Acute	: Short-term (acute) aquatic hazard
Aquatic Chronic	: Long-term (chronic) aquatic hazard
Carc.	: Carcinogenicity
Eye Dam.	: Serious eye damage
Flam. Liq.	: Flammable liquids
Repr.	: Reproductive toxicity
Skin Corr.	: Skin corrosion
Skin Irrit.	: Skin irritation
STOT RE	: Specific target organ toxicity - repeated exposure
STOT SE	: Specific target organ toxicity - single exposure
2009/161/EU	: Europe. COMMISSION DIRECTIVE 2009/161/EU establishing a third list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Commission Directive 2000/39/EC
CH SUVA	: Switzerland. Limit values at the work place
2009/161/EU / TWA	: Limit Value - eight hours
2009/161/EU / STEL	: Short term exposure limit
CH SUVA / TWA	: Time Weighted Average
CH SUVA / STEL	: Short Term Exposure Limit

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ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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 Organization 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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, Authorization and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - substance of very high concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Classification of the mixture:

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Aquatic Chronic 3	H412

Classification procedure:

Calculation method
Calculation method
Calculation method

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.

CH / EN