

SAFETY DATA SHEET

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



DISPERBYK-111

Version: 9.1
SDB_IS

Revision Date: 26.11.2025

Date of last issue: 06.11.2025
Print Date: 09.12.2025

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

1.1 Product identifier

Trade name : DISPERBYK-111

Product code : 000000000000105348

Substance name : Polyphosphoric acids, reaction products with 2-oxepanone, polyethylene glycol mono-Me ether and tetrahydro-2H-pyran-2-one

CAS-No. : 162627-22-7

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

Use of the Substance/Mixture : Wetting & Dispersing Additive

1.3 Details of the supplier of the safety data sheet

Company : BYK-Chemie GmbH
Abelstrasse 45
46483 Wesel

Telephone : +49 281 670-0
Telefax : +49 281 65735

Information : Regulatory Affairs
Telephone : +49 281 670-23532
Telefax : +49 281 670-23533
E-mail address : GHS.BYK@altana.com

1.4 Emergency telephone

Europe +44 1235 239670
Middle East/Africa +44 1235 239671
Americas +1 215 207 0061
East/South East Asia +65 3158 1074
(Local India: 000 800 100 7479)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Serious eye damage, Category 1 H318: Causes serious eye damage.
Skin corrosion, Category 1 H314: Causes severe skin burns and eye damage.

2.2 Label elements

Labeling (REGULATION (EC) No 1272/2008)

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Hazard pictograms	:	
Signal Word	:	Danger
Hazard Statements	:	H314 Causes severe skin burns and eye damage.
Precautionary Statements	:	Prevention: P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection. Response: P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor. P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor. Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous ingredients which must be listed on the label:

- 7664-38-2 phosphoric acid

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

3.1 Substances

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Substance name : Polyphosphoric acids, reaction products with 2-oxepanone, polyethylene glycol mono-Me ether and tetrahydro-2H-pyran-2-one

CAS-No. : 162627-22-7

Chemical nature : Polymeric phosphoric acid ester

Components

Chemical name	CAS-No. EC-No.	Concentration (%) w/w)	M-Factor, SCL, ATE
Phosphoric acid polyester	162627-22-7	$\geq 50 - \leq 100$	
phosphoric acid	7664-38-2 231-633-2	$\geq 1 - < 3$	specific concentration limit Skin Irrit. 2; H315 10 - < 25 % Eye Irrit. 2; H319 10 - < 25 % Skin Corr. 1B; H314 ≥ 25 %

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice : Move out of dangerous area.
Consult a physician.
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 : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.
If on skin, rinse well with water.
If on clothes, remove clothes.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital.

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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 induce vomiting.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.
Take victim immediately to hospital.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

Risks : Causes serious eye irritation.

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

Hazardous combustion products : Carbon oxides
Sulfur oxides
Oxides of phosphorus

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.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Use personal protective equipment.

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 : Neutralize with chalk, alkali solution or ammonia.
Soak up with inert absorbent material (e.g. sand, silica gel,
acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

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 : 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.
To avoid spills during handling keep bottle on a metal tray.
Dispose of rinse water in accordance with local and national
regulations.

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

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 only in the original container.

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

Advice on common storage : Keep away from oxidizing agents.
Keep away from metals.

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

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storage stability

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
phosphoric acid	7664-38-2	TWA	1 mg/m ³	2000/39/EC
	Further information: Indicative			
		STEL	2 mg/m ³	2000/39/EC
	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
phosphoric acid	Workers	Inhalation	Long-term local effects	1 mg/m ³
	Workers	Inhalation	Acute local effects	2 mg/m ³
	Consumers	Inhalation	Long-term local effects	0,73 mg/m ³

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

Material : Nitrile rubber
Break through time : > 120,00 min
Glove thickness : 0,35 mm

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

Skin and body protection : Impervious clothing
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.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	: liquid
Color	: light yellow
Odor	: odorless
Odor Threshold	: No data available
Melting point/freezing point	: 9,00 °C Method: derived
Initial boiling point and boiling range	: > 200 °C Method: derived
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Flash point	: > 150 °C Method: 49 (Pensky-Martens)
Autoignition temperature	: > 200 °C Method: DIN 51794
Decomposition temperature	: No data available
pH	: 1,1 (20 °C) Concentration: 1 % Method: DIN 19268 (1% in water)
Viscosity Viscosity, dynamic	: No data available
Solubility(ies) Water solubility	: immiscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Vapor pressure	: < 1,0000000 hPa (20,00 °C) Method: derived

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Relative density	:	No data available
Density	:	1,1600 g/cm ³ (20,00 °C) Method: 4 (20°C oscillating U-tube)
Relative vapor density	:	No data available

9.2 Other information

Flammability (liquids)	:	Sustains combustion
Evaporation rate	:	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	:	Metals Gives off hydrogen by reaction with metals. No decomposition if stored and applied as directed.
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10.4 Conditions to avoid

Conditions to avoid	:	No data available
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10.5 Incompatible materials

Materials to avoid	:	Strong oxidizing agents Metals
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10.6 Hazardous decomposition products

No decomposition if stored and applied as directed.

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.

Components:

Phosphoric acid polyester:

Acute oral toxicity	:	LD50 Oral (Rat, male and female): > 5.000 mg/kg Method: OECD Test Guideline 401 GLP: yes
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Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

phosphoric acid:

Acute oral toxicity : Remarks: No data available

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation

Not classified due to lack of data.

Product:

Remarks : Extremely corrosive and destructive to tissue.

Components:

Phosphoric acid polyester:

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

phosphoric acid:

Remarks : No data available

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks : May cause irreversible eye damage.

Components:

Phosphoric acid polyester:

Species : Rabbit
Assessment : Irritating to eyes.
Result : Eye irritation
GLP : yes

phosphoric acid:

Remarks : No data available

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Respiratory or skin sensitization

Skin sensitization

Not classified due to lack of data.

Respiratory sensitization

Not classified due to lack of data.

Product:

Remarks : No data available

Germ cell mutagenicity

Not classified due to lack of data.

Product:

Genotoxicity in vitro : Remarks: No data available

Genotoxicity in vivo : Remarks: No data available

Components:

Phosphoric acid polyester:

Genotoxicity in vitro : Test Type: Ames test
Metabolic activation: with and without metabolic activation
Result: negative
GLP: yes

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Mouse (male and female)
Method: Mutagenicity (micronucleus test)
Result: negative
GLP: yes

Carcinogenicity

Not classified due to lack of data.

Product:

Remarks : No data available

Reproductive toxicity

Not classified due to lack of data.

Product:

Effects on fertility : Remarks: No data available

Effects on fetal development : Remarks: No data available

STOT-single exposure

Not classified due to lack of data.

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Product:

Remarks : No data available

STOT-repeated exposure

Not classified due to lack of data.

Product:

Remarks : No data available

Repeated dose toxicity

Product:

Remarks : No data available

Components:

Phosphoric acid polyester:

Species : Rat, male and female
LOAEL : 4.000 mg/kg
Application Route : Oral
Method : OECD Test Guideline 407
GLP : yes

Aspiration toxicity

Not classified due to lack of data.

Product:

No data available

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

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SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: No data available

Components:

Phosphoric acid polyester:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 770 mg/l
Exposure time: 48 h
Test Type: static test
Method: DIN 38412
GLP: no

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 130 mg/l
Exposure time: 72 h
GLP: yes

Toxicity to microorganisms : EC50 (Pseudomonas putida): > 500 mg/l
Exposure time: 16 h
Test Type: Cell multiplication inhibition test
Method: DIN 38412, L 8
GLP: no

phosphoric acid:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
GLP: yes

12.2 Persistence and degradability

Product:

Biodegradability : Remarks: No data available

Components:

Phosphoric acid polyester:

Biodegradability : Result: Not readily biodegradable.
Exposure time: 28 d
Method: OECD Test Guideline 301
GLP: no

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12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No data 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 : No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : 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.

SECTION 14: Transport information

14.1 UN number or ID number

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ADR : UN 3264

IMDG : UN 3264

IATA : UN 3264

14.2 UN proper shipping name

ADR : CORROSIVE LIQUID, ACIDIC, INORGANIC,N.O.S.
(Orthophosphoric acid)

IMDG : CORROSIVE LIQUID, ACIDIC, INORGANIC,N.O.S.
(Orthophosphoric acid)

IATA : Corrosive liquid, acidic, inorganic,n.o.s
(Orthophosphoric acid)

14.3 Transport hazard class(es)

ADR : 8

IMDG : 8

IATA : 8

14.4 Packing group

ADR
Packing group : II
Classification Code : C1
Hazard Identification Number : 80
Labels : 8
Tunnel restriction code : E

IMDG
Packing group : II
Labels : 8
EmS Code : F-A, S-B
Remarks : IMDG Code segregation group 1 - Acids

IATA (Cargo)
Packing instruction (cargo aircraft) : 855
Packing group : II
Labels : Corrosives

IATA (Passenger)
Packing instruction (passenger aircraft) : 851
Packing instruction (LQ) : Y840
Packing group : II
Labels : Corrosives

14.5 Environmental hazards

ADR
Environmentally hazardous : no

IMDG

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Marine pollutant : no

14.6 Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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 3
	Number on list 75: If you intend to use this product as tattoo ink, please contact your vendor.
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

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 other abbreviations

2000/39/EC : Europe. Commission Directive 2000/39/EC establishing a first

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list of indicative occupational exposure limit values

2000/39/EC / TWA : Limit Value - eight hours

2000/39/EC / STEL : Short term exposure limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIIC - 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

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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