

## NANOBYK-3611

Version 2.2  
SDS\_AU

Revision Date: 16.04.2026

Date of last issue: 17.12.2024  
Print Date 22.04.2026**SECTION 1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : NANOBYK-3611  
Product code : 000000000000133337

**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 : 18000 74234 (toll –free number, access from Australia only)  
+61 2 8014 4558

**Importer**

Company : Alchemy Agencies Pty Ltd  
Level 15, 28 Freshwater Place  
Southbank, Victoria, Australia 3006  
Tel: +61 3 9116 6359

Use of the Sub-  
stance/Mixture : Additive to Improve Mechanical Properties

**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Flammable liquids : Category 3  
Specific target organ toxicity -  
single exposure : Category 3 (Central nervous system)

**GHS label elements**

Hazard pictograms :  

Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.  
H336 May cause drowsiness or dizziness.

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Precautionary statements

**Prevention:**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P233 Keep container tightly closed.  
P240 Ground and bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.  
P242 Use non-sparking tools.  
P243 Take action to prevent static discharges.  
P261 Avoid breathing mist or vapours.  
P271 Use only outdoors or in a well-ventilated area.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

**Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

**Storage:**

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.

**Disposal:**

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 : Dispersion of alumina nanoparticles

**Components**

Chemical name	CAS-No.	Concentration (% w/w)
2-methoxy-1-methylethyl acetate	108-65-6	>= 50 -<= 100
aluminium oxide	1344-28-1	>= 30 -< 50
Phosphoric acid polyester	-	>= 3 -< 5

**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.

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If inhaled	:	Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice.
In case of skin contact	:	If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Flush eyes with water as a precaution. 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.
Most important symptoms and effects, both acute and delayed	:	No information available. May cause drowsiness or dizziness.
Notes to physician	:	No information available.

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**SECTION 5. FIREFIGHTING MEASURES**

Suitable extinguishing media	:	Alcohol-resistant foam Carbon dioxide (CO <sub>2</sub> ) Dry chemical
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire-fighting	:	Cool closed containers exposed to fire with water spray. Will not explode on mechanical impact.  Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides chlorinated compounds formaldehyde silicone compounds Oxides of phosphorus Sulphur oxides
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.
Hazchem Code	:	•3Y

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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

Personal precautions, protective equipment and emergency measures	:	Remove all sources of ignition. Evacuate personnel to safe areas.
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gency procedures	Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
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).

## SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	: Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). Keep away from open flames, hot surfaces and sources of ignition.
Advice on safe handling	: Avoid formation of aerosol. Do not breathe vapours/dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.
Hygiene measures	: 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. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. 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/PERSONAL PROTECTION

## Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-methoxy-1-methylethyl acetate	108-65-6	TWA	50 ppm 274 mg/m <sup>3</sup>	AU OEL
Further information: Skin absorption				
		STEL	100 ppm	AU OEL

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			548 mg/m <sup>3</sup>	
	Further information: Skin absorption			
aluminium oxide	1344-28-1	TWA	10 mg/m <sup>3</sup>	AU OEL
		TWA (Respirable particulate matter)	1 mg/m <sup>3</sup>	ACGIH

**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 : < 480 min
- Remarks : Wear suitable gloves.
- Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles
- Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

- Appearance : dispersion
- Colour : off-white
- Odour : solvent-like
- Odour Threshold : No data available
- pH : 6 (20 °C)  
Concentration: 10 %  
Method: Universal pH-value indicator
- Melting point/ range : < -65 °C  
(1,013 hPa)  
Method: derived
- Boiling point/boiling range : 146 °C  
(1,013 hPa)  
Method: derived
- Flash point : 46 °C  
  
Method: DIN 13736 (Abel)
- Evaporation rate : No data available
- Flammability (liquids) : Sustains combustion
- Upper explosion limit / Upper flammability limit : 10.8 %(V)

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Lower explosion limit / Lower flammability limit	:	1.5 %(V)
Vapour pressure	:	4.6 hPa (20 °C) Method: derived
Relative vapour density	:	No data available
Relative density	:	No data available
Density	:	1.255 g/cm <sup>3</sup> (20 °C, 1,013 hPa) Method: 4 (20°C oscillating U-tube)
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	190.00000 g/l partly miscible (1,013 hPa)
Solubility in other solvents	:	No data available
Auto-ignition temperature	:	> 200 °C Method: M0062 (Analytics Wesel)
Decomposition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	14 mPa.s Method: P/K 20°C
Viscosity, kinematic	:	No data available
Surface tension	:	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. Vapours may form explosive mixture with air.
Conditions to avoid	:	Prolonged heat/light/air exposure Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents Metals
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:**

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Acute oral toxicity : Remarks: No data available

**Components:****2-methoxy-1-methylethyl acetate:**Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

**Phosphoric acid polyester:**Acute oral toxicity : LD50 Oral (Rat, male and female): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

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 : No data available

**Components:****2-methoxy-1-methylethyl acetate:**Species : Rabbit  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes**Phosphoric acid polyester:**Species : Rabbit  
Assessment : No skin irritation  
Method : OECD Test Guideline 404  
Result : No skin irritation  
GLP : yes**Serious eye damage/eye irritation**

Not classified due to lack of data.

**Components:****2-methoxy-1-methylethyl acetate:**Species : Rabbit  
Result : No eye irritation  
Method : OECD Test Guideline 405

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GLP : yes

**Phosphoric acid polyester:**Species : Rabbit  
Result : Eye irritation  
Assessment : Irritating to eyes.  
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:****2-methoxy-1-methylethyl acetate:**Species : Guinea pig  
Method : OECD Test Guideline 406  
Result : Not a skin sensitizer.  
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

**Components:****Phosphoric acid polyester:**Genotoxicity in vitro : Test Type: Ames test  
Metabolic activation: with and without metabolic activation  
Result: negative  
GLP: yesGenotoxicity in vivo : Test Type: In vivo micronucleus test  
Species: Mouse (male and female)  
Method: Mutagenicity (micronucleus test)  
GLP: yes  
Remarks: negative

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### **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 foetal development : Remarks: No data available

### **STOT - single exposure**

May cause drowsiness or dizziness.

#### **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

### **Further information**

#### **Product:**

Remarks : Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

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Concentrations substantially above the TLV value may cause narcotic effects.  
Solvents may degrease the skin.

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Toxicity to fish :  
Remarks: No data available

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

**Components:****2-methoxy-1-methylethyl acetate:**

Toxicity to fish : LC50 (Fish): 100 - 180 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 203  
GLP: no

Toxicity to algae/aquatic : EC50 (Pseudokirchneriella subcapitata (green algae)): >  
plants 1,000 mg/l  
Exposure time: 96 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: no

**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 : ErC50 (Pseudokirchneriella subcapitata (green algae)): 130  
plants 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

**Persistence and degradability****Product:**

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Biodegradability : Remarks: No data available

**Components:****2-methoxy-1-methylethyl acetate:**Biodegradability : Result: Readily biodegradable.  
Method: OECD Test Guideline 301F  
GLP: yes**Phosphoric acid polyester:**Biodegradability : Result: Not readily biodegradable.  
Exposure time: 28 d  
Method: OECD Test Guideline 301  
GLP: no**Bioaccumulative potential****Product:**

Bioaccumulation : Remarks: No data available

**Components:****2-methoxy-1-methylethyl acetate:**Partition coefficient: n- : log Pow: 1.2 (20 °C)  
octanol/water pH: 6.8  
Method: OECD Test Guideline 117  
GLP: yes**Mobility in soil**

No data available

**Other adverse effects****Product:**Results of PBT and vPvB : This substance/mixture contains no components considered  
assessment to be either persistent, bioaccumulative and toxic (PBT), or  
very persistent and very bioaccumulative (vPvB) at levels of  
0.1% or higher.Additional ecological infor- : No data available  
mation**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**Waste from residues : Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemi-  
cal 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.

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Do not burn, or use a cutting torch on, the empty drum.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****UNRTDG**

UN number : UN 3272  
Proper shipping name : ESTERS, N.O.S.  
(1-Methoxy-2-propanol acetate)  
Class : 3  
Packing group : III  
Labels : 3

**IATA-DGR**

UN/ID No. : UN 3272  
Proper shipping name : Esters, n.o.s.  
(1-Methoxy-2-propanol acetate)  
Class : 3  
Packing group : III  
Labels : Flammable Liquids  
Packing instruction (cargo aircraft) : 366  
Packing instruction (passenger aircraft) : 355

**IMDG-Code**

UN number : UN 3272  
Proper shipping name : ESTERS, N.O.S.  
(1-Methoxy-2-propanol acetate)  
Class : 3  
Packing group : III  
Labels : 3  
EmS Code : F-E, S-D  
Marine pollutant : no  
Remarks : IMDG Code segregation group - none

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

Not applicable for product as supplied.

**National Regulations****ADG**

UN number : UN 3272  
Proper shipping name : ESTERS, N.O.S.  
(1-Methoxy-2-propanol acetate)  
Class : 3  
Packing group : III  
Labels : 3  
Hazchem Code : •3Y

**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.

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## SECTION 15. REGULATORY INFORMATION

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

## SECTION 16. OTHER INFORMATION

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**Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
AU OEL : Australia. Workplace Exposure Standards for Airborne Contaminants.

ACGIH / TWA : 8-hour, time-weighted average  
AU OEL / TWA : Exposure standard - time weighted average  
AU OEL / STEL : 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 Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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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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