

**NANOBYK-3611**

Version 1

Revision Date 04/21/2023

Print Date 01/06/2026

**SECTION 1. IDENTIFICATION**

Product name : NANOBYK-3611

**Manufacturer or supplier's details**Company : BYK USA LLC  
524 South Cherry Street  
Wallingford CT 06492

Telephone : (203) 265-2086

Visit our web site : [www.byk.com](http://www.byk.com)E-mail address : [BRIEF.BYK.NAFTA@altana.com](mailto:BRIEF.BYK.NAFTA@altana.com)Emergency telephone : 203-265-2086; CHEMTREC 1-800-424-9300 / +1  
number 703-527-3887**Recommended use of the chemical and restrictions on use**

Recommended use : Additive to Improve Mechanical Properties

Restrictions on use : Refer to Section 15 for any restrictions that may apply

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

Flammable liquids : Category 3

Specific target organ toxicity : Category 3 (Respiratory system, Central nervous system)  
- single exposure**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.  
H335 May cause respiratory irritation.  
H336 May cause drowsiness or dizziness.Precautionary statements : **Prevention:**  
P210 Keep away from heat/ sparks/ open flames/ hot surfaces.  
No smoking.  
P233 Keep container tightly closed.  
P240 Ground/bond container and receiving equipment.  
P241 Use explosion-proof electrical/ ventilating/ lighting  
equipment.  
P242 Use only non-sparking tools.  
P243 Take precautionary measures against static discharge.  
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

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P271 Use only outdoors or in a well-ventilated area.  
 P280 Wear protective gloves/ eye protection/ face protection.

**Response:**

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

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**

None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture  
 Chemical nature : Dispersion of alumina nanoparticles

**Hazardous components**

Component	CAS-No.	Concentration (%)
1-Methoxy-2-propanol acetate	108-65-6	>= 30 - < 60
Aluminum oxide	1344-28-1	>= 30 - < 60
Phosphoric acid polyester	-	>= 1 - < 5

### SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.  
 Show this safety data sheet to the doctor in attendance.  
 Symptoms of poisoning may appear several hours later.  
 Do not leave the victim unattended.

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.

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If swallowed	Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist. : 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.
Notes to physician	: No information available.

### 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 firefighting	: Do not allow run-off from fire fighting to enter drains or water courses.  Handle as an industrial chemical. Cool closed containers exposed to fire with water spray.
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. 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.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. 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

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local / national regulations (see section 13).

### SECTION 7. HANDLING AND STORAGE

- 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.
- 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.
- Materials to avoid : Keep away from oxidizing agents.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
1-Methoxy-2-propanol acetate	108-65-6	TWA	50 ppm	US WEEL
Aluminum oxide	1344-28-1	TWA (Total)	10 mg/m <sup>3</sup>	OSHA P0
Aluminum oxide		TWA (Respirable fraction)	5 mg/m <sup>3</sup>	OSHA P0
Aluminum oxide		TWA (Respirable fraction)	1 mg/m <sup>3</sup>	ACGIH

Hazardous components without workplace control parameters

**Engineering measures** : Use with local exhaust ventilation.

#### Personal protective equipment

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

Hand protection

Material : Impervious gloves

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Remarks	: The suitability for a specific workplace should be discussed with the producers of the protective 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.
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	: dispersion
Colour	: off-white
Odour	: solvent-like
Odour Threshold	: No data available
pH	: 6, Concentration: 10 % (68 °F (20 °C)) Method: Universal pH-value indicator
Melting point/range	: < -85 °F (< -65 °C) (1,013 hPa) Method: derived
Boiling point/boiling range	: 295 °F (146 °C) (1,013 hPa) Method: derived
Vapour pressure	: 4.6 hPa (68 °F (20 °C)) Method: derived
Flash point	: 115 °F (46 °C) Method: DIN 13736 (Abel)
Upper explosion limit	: 10.8 %(V)
Lower explosion limit	: 1.5 %(V)
Evaporation rate	: No data available
Relative vapour density	: No data available
Relative Density/Specific Gravity	: No data available
Density	: 1.255 g/cm <sup>3</sup> (68 °F (20 °C)) Method: 4 (20°C oscillating U-tube)

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Bulk density	:	Not applicable
Solubility(ies)	:	
Water solubility	:	190.00000 g/l ( )1,013 hPa) partly miscible
Solubility in other solvents	:	No data available
Ignition temperature	:	> 392 °F (> 200 °C) Method: M0062 (Analytics Wesel)
Thermal decomposition	:	No data available
Viscosity	:	
Viscosity, dynamic	:	14 mPa.s Method: P/K 20°C
Viscosity, kinematic	:	No data available
Surface tension	:	No data available

**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.

**SECTION 11. TOXICOLOGICAL INFORMATION****Information on likely routes of exposure**

Inhalation  
Ingestion  
Eye contact  
Skin contact

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

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Acute oral toxicity : Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

**Components:****108-65-6 1-Methoxy-2-propanol acetate:**

Acute oral toxicity : LD50 (Rat, female): > 5,000 mg/kg  
Method: OECD Test Guideline 401  
GLP: yes

Acute inhalation toxicity : LC50 (Rat): > 100 ppm  
Exposure time: 4 h

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

**1344-28-1 Aluminum oxide:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.38 mg/l

**- 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****Product:**

Remarks: No data available

**Components:****108-65-6 1-Methoxy-2-propanol acetate:**

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

**1344-28-1 Aluminum oxide:**

Species: Rabbit  
Result: Moderate skin irritation

**- Phosphoric acid polyester:**

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

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GLP: yes

**Serious eye damage/eye irritation****Product:**

Remarks: Vapours may cause irritation to the eyes, respiratory system and the skin.

**Components:****108-65-6 1-Methoxy-2-propanol acetate:**

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

GLP: yes

**1344-28-1 Aluminum oxide:**

Species: Rabbit

Result: Eye irritation

**- Phosphoric acid polyester:**

Species: Rabbit

Result: Eye irritation

Assessment: Irritating to eyes.

GLP: yes

**Respiratory or skin sensitisation****Product:**

Remarks: No data available

**Components:****108-65-6 1-Methoxy-2-propanol acetate:**

Species: Guinea pig

Method: OECD Test Guideline 406

Result: Not a skin sensitizer.

GLP: yes

**Germ cell mutagenicity****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

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GLP: yes

Genotoxicity in vivo

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

**Carcinogenicity****Product:**

Remarks: No data available

**IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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

Effects on fertility : Remarks: No data available

Effects on foetal development : Remarks: No data available

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

Remarks: No data available

**Components:****108-65-6 1-Methoxy-2-propanol acetate:**

Assessment: May cause drowsiness or dizziness.

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

Remarks: No data available

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

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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****Product:**

No data available

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

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

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

Biodegradability : Remarks: No data available

**Bioaccumulative potential****Product:**

Bioaccumulation : Remarks: No data available

**Mobility in soil**

No data available

**Other adverse effects****Product:**

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Results of PBT and vPvB 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.
Regulation	40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks	This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
Additional ecological information	: No data available

### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

EPA Hazardous Waste Code(s)	: D001: Ignitable
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

##### 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)

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: )  
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****49 CFR**

UN/ID/NA number : UN 3272  
Proper shipping name : Esters, n.o.s.  
(1-Methoxy-2-propanol acetate)  
Class : 3  
Packing group : III  
Labels : FLAMMABLE LIQUID  
ERG Code : 127  
Marine pollutant : no

**SECTION 15. REGULATORY INFORMATION****EPCRA - Emergency Planning and Community Right-to-Know Act****US. EPA CERCLA Hazardous Substances (40 CFR 302)**

Calculated RQ exceeds reasonably attainable upper limit.

**SARA 304 - Emergency Release Notification**

This material does not contain any components with a section 304 EHS RQ.

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)**

This material does not contain any components with a SARA 302 RQ.

**SARA 311/312 Hazards** : Per the June 13, 2016 Federal Register notice, EPA harmonized the EPCRA 311/312 hazard categories with the 2012 OSHA hazard communication standard for classifying and labeling of chemicals (i.e. GHS). Please refer to Section 2 of the SDS to identify the appropriate hazard categories for reporting purposes.

**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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**SARA 313** : This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Aluminum oxide	1344-28-1	30 %
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### Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Non-volatile (Wt) : 37.9 %  
Method: 23 (20min/150°C)  
DIN EN ISO 3251

### Massachusetts Right To Know

Aluminum oxide	1344-28-1
1,4-Dioxane	123-91-1

### Pennsylvania Right To Know

1-Methoxy-2-propanol acetate	108-65-6
Aluminum oxide	1344-28-1
Alkylolammonium salt of a copolymer	-
Phosphoric acid polyester	-
Phosphoric acid (residual)	7664-38-2

### New Jersey Right To Know

**New Jersey Trade Secret Registry Number for the product (NJ TSRN)** : 800963-5893

### California Prop. 65

**⚠ WARNING:** This product can expose you to chemicals including 1,4-Dioxane, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

### The components of this product are reported in the following inventories:

TSCA : All substances listed as active on the TSCA inventory

TSCA Inventory Active List : All components of this product are listed active and/or are exempt

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- Section 5a : No substances are subject to a Significant New Use Rule.
- Section 4 / 12(b) : No substances are subject to TSCA 12(b) export notification requirements.
- DSL : We certify that all of the components of this product are listed on the DSL.

**SECTION 16. OTHER INFORMATION**

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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.