

NANOBYK-3650

Version 9

Revision Date 03/31/2025

Print Date 04/30/2026

SECTION 1. IDENTIFICATION

Product name : NANOBYK-3650

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

Telephone : (203) 265-2086

Visit our web site : www.byk.comE-mail address : BRIEF.BYK.NAFTA@altana.comEmergency 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 (Central nervous system)
- single exposure**GHS label elements**

Hazard pictograms :



Signal word : Warning

Hazard statements : H226 Flammable liquid and vapour.
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.
P271 Use only outdoors or in a well-ventilated area.

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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 surface treated silica nanoparticles

Hazardous components

Component	CAS-No.	Concentration (%)
1-Methoxy-2-propanol acetate	108-65-6	>= 30 - < 60
1-Methoxy-2-propanol	107-98-2	>= 10 - < 20

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 : Remove to fresh air. Administer artificial respiration if necessary. Get medical aid as soon as possible.
 Consult a physician after significant exposure.
 If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Remove contaminated clothing. Wash thoroughly with soap and water.
 If skin irritation persists, call a physician.
 If on skin, rinse well with water.

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In case of eye contact	: If on clothes, remove clothes. : Immediately flush with plenty of water for at least 20 minutes. Get medical aid. 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	: Do not induce vomiting; aspiration hazard. Dilute with 1-2 glasses of water. Get medical aid. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs. 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.
Most important symptoms and effects, both acute and delayed	: No information available.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: 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 Oxides of phosphorus Sulphur oxides silicone compounds formaldehyde chlorinated compounds
Further information	: Keep away from heat and sources of ignition. Keep away from oxidizing agents. 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.

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Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Eliminate all sources of ignition. Ventilate area if indoors. Wear self-contained breathing apparatus and full protective clothing.

: 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 spilled material from entering the ground, water and/or air by using appropriate containment methods.

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 : Stop leak. Dike and contain spill.
Pump into salvage tanks and/or absorb with suitable material.
Use sparkless shovels to remove material.

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 safe handling : Avoid formation of aerosol.
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.
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

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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
1-Methoxy-2-propanol	107-98-2	TWA	50 ppm	ACGIH
1-Methoxy-2-propanol		STEL	100 ppm	ACGIH
1-Methoxy-2-propanol		TWA	100 ppm 360 mg/m ³	NIOSH REL
1-Methoxy-2-propanol		ST	150 ppm 540 mg/m ³	NIOSH REL

Engineering measures : Use with local exhaust ventilation.

Personal protective equipment

Respiratory protection : Use an air purifying respirator with organic vapor (OV) cartridges. When there are exposures to mists (both solid and/or liquid droplets), a Class 1 particulate respirator (APF 10) is required (N, P, or R 100 filter) with the OV cartridge. In the case of vapour formation use a respirator with an approved filter.

Hand protection
Material : Nitrile rubber

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

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

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

Hygiene measures : At a minimum, clean long-legged, long-sleeved work clothes.
Use chemical-resistant clothing for more comprehensive skin

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protection.
Handle in accordance with good industrial hygiene and safety practice.
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	: translucent
Odour	: solvent-like
Odour Threshold	: No data available
pH	: 7, Concentration: 1 % (68 °F (20 °C)) Method: Universal pH-value indicator
Melting point/ range	: No data available
Initial boiling point	: ca. 248 °F (120 °C)
Vapour pressure	: ca. 3.8 hPa (68 °F (20 °C)) Method: calculated
Flash point	: 113 °F (45 °C) Method: 48 (Abel-Pensky) DIN 51755
Upper explosion limit	: ca. 13.7 %(V)
Lower explosion limit	: ca. 1.5 %(V)
Evaporation rate	: No data available
Relative vapour density	: No data available
Relative Density/Specific Gravity	: No data available
Density	: 1.15 g/cm ³ (68 °F (20 °C)) Method: 1 (20°C coating pycnometer)
Bulk density	: Not applicable
Solubility(ies)	
Water solubility	: immiscible
Solubility in other solvents	: No data available
Partition coefficient: n-	: No data available

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octanol/water
Ignition temperature : > 392 °F (> 200 °C)
Method: DIN 51794

Thermal decomposition : No data available

Viscosity
Viscosity, dynamic : 10 mPa.s
Method: 11 (NV, 20°C)

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
No decomposition if stored and applied as directed.

Chemical stability : Stable; polymerization will not occur
No decomposition if stored and applied as directed.

Possibility of hazardous reactions : 1-Methoxy-2-propanol acetate/1-Methoxy-2-propanol may form peroxides of unknown stability.

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

Hazardous decomposition products : None expected

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

Skin contact
Skin Absorption
Inhalation
Eyes
Ingestion

Acute toxicity**Product:**

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

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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

107-98-2 1-Methoxy-2-propanol:

Acute oral toxicity : LD50 (Rat, male and female): 4,016 mg/kg
Method: EC Directive 92/69/EEC B.1 Acute Toxicity (Oral)
GLP: yes

Acute inhalation toxicity : LC50 (Rat): 1500 ppm

Acute dermal toxicity : LD50 (Rabbit): 13,000 mg/kg

Skin corrosion/irritation**Product:**

Remarks: No data available

Remarks: May cause skin irritation in susceptible persons.

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

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

107-98-2 1-Methoxy-2-propanol:

Species: Rabbit
Method: Directive 67/548/EEC, Annex V, B.4.
Result: No skin irritation
GLP: yes

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

Remarks: Causes serious eye irritation.

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

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

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107-98-2 1-Methoxy-2-propanol:

Species: Rabbit

Result: No eye irritation

Method: Directive 67/548/EEC, Annex V, B.5.

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

107-98-2 1-Methoxy-2-propanol:

Test Type: Maximisation Test

Exposure routes: Dermal

Species: Guinea pig

Method: Directive 67/548/EEC, Annex V, B.6.

Result: Does not cause skin sensitisation.

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

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.

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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

STOT - repeated exposure**Product:**

Remarks: No data available

Repeated dose toxicity**Product:**

Remarks: Solvent absorption by inhalation and/or repeated skin contact may cause injury to liver, kidney and respiratory system.

Studies suggest that 2-Methoxy-1-propanol acetate is teratogenic in animals. There is also evidence of fetotoxicity.

This product contains dispersed nano-particles. Since the toxicological effects of this nano-particle have not been explored, protect employees from all potential routes of exposure.

Aspiration toxicity**Product:**

No data available

Experience with human exposure**Product:**

Inhalation:

Symptoms:

High concentrations of vapors may be irritating to the respiratory tract. May cause headaches, dizziness, nausea and vomiting. May cause CNS depression (drowsiness, loss of coordination and fatigue).

Skin contact:

Symptoms:

Contact will probably cause irritation.

Eye contact:

Symptoms:

Contact will probably cause irritation.

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Ingestion:

Symptoms:

Ingestion may irritate the digestive tract; high dosages may cause CNS depression.

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

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

No data available

Product:

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

:

There is no data available for this product.

No data available

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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- EPA Hazardous Waste Code(s) : D001: Ignitable
- Waste from residues : Dispose of in accordance with applicable local/municipal, state/provincial and federal regulations.
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 1993
- Proper shipping name : Flammable liquid, n.o.s.
(1-Methoxy-2-propanol acetate, 1-Methoxy-2-propanol)
- Class : 3
- Packing group : III
- Labels : Flammable Liquids
- Packing instruction (cargo aircraft) : 366
- Packing instruction (passenger aircraft) : 355

IMDG-Code

- UN number : UN 1993
- Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(1-Methoxy-2-propanol acetate, 1-Methoxy-2-propanol)
- :)
- Class : 3
- Packing group : III
- Labels : 3
- EmS Code : F-E, S-E
- 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.

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National Regulations**49 CFR**

UN/ID/NA number : UN 1993
Proper shipping name : Flammable liquids, n.o.s.
(1-Methoxy-2-propanol acetate, 1-Methoxy-2-propanol)
Class : 3
Packing group : III
Labels : FLAMMABLE LIQUID
ERG Code : 128
Marine pollutant : no
Container sizes: 55 gallon drums, 5 or 6-gallon pails, 2oz/16oz samples

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

This material does not contain any components with a CERCLA RQ.

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.

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

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).

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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 Intermediate or Final VOC's (40 CFR 60.489).

Non-volatile (Wt) : 31 %
 Method: 23 (20min/150°C)
 DIN EN ISO 3251
 Non-volatile information is not a specification.

Massachusetts Right To Know

1-Methoxy-2-propanol	107-98-2
dimethyl sulphate	77-78-1
Hydrogen cyanide	74-90-8

Pennsylvania Right To Know

1-Methoxy-2-propanol acetate	108-65-6
Surface treated silica	Not Assigned
1-Methoxy-2-propanol	107-98-2
Dicarboxylic acid ester	-
Polymer	-
Methanol	67-56-1

New Jersey Right To Know

New Jersey Trade Secret Registry Number for the product (NJ TSRN) : 800963-5325

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including dimethyl sulphate, which is/are known to the State of California to cause cancer, and Methanol, Hydrogen cyanide, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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

TSCA : We certify that all of the components of this product are either listed on the TSCA Inventory or are not subject to the notification requirements per 40 CFR 720 30(h).

Section 5 : SNUR 40 CFR 721.10119. New Uses: Other than described in PMN. Approved Uses: Additive for Coatings - industrial, wood and furniture, PVC plastisols, and automotive refinishing and OEM. Restrictions: Must be distributed in liquid form. Where there are exposures to mists (both solid and/or liquid droplets), a Class 1 particulate respirator (APF10) is required. Gloves required. Refer to Section 8 for PPE.

: Siloxane modified silica nanoparticles. Section 5.

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

DSL : The following component(s) is/are not listed on the DSL:

CEPA Category : Chemical
Weight percent : 26 %
NSN Filed : None
Max. NSN Required : Schedule 5

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.