

NANOBYK-3652

Version 8

Revision Date 04/29/2021

Print Date 09/29/2022

SECTION 1. IDENTIFICATION

Product name : NANOBYK-3652

Manufacturer or supplier's details

Company : BYK USA Inc.
524 South Cherry Street
Wallingford CT 06492

Telephone : (203) 265-2086

Visit our web site : www.byk.com

E-mail address : 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 (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.

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P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
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 surface treated silica nanoparticles

Hazardous components

| Component | CAS-No. | Concentration (%) |
|------------------------------|----------|-------------------|
| 1-Methoxy-2-propanol acetate | 108-65-6 | >= 41 - < 42 |
| 1-Methoxy-2-propanol | 107-98-2 | >= 13 - < 14 |

SECTION 4. FIRST AID MEASURES

If inhaled : Remove to fresh air. Administer artificial respiration if necessary. Get medical aid as soon as possible.

In case of skin contact : Remove contaminated clothing. Wash thoroughly with soap and water.

In case of eye contact : Immediately flush with plenty of water for at least 20 minutes. Get medical aid.

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- 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.
Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : No information available.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Foam
Carbon dioxide (CO₂)
Dry chemical
- Unsuitable extinguishing media : No information available.
- Specific hazards during firefighting : Will not explode on mechanical impact.
Cool closed containers exposed to fire with water spray.
- Hazardous combustion products : Carbon oxides
Nitrogen oxides (NO_x)
silicone compounds
formaldehyde
chlorinated compounds
- Further information : Keep away from heat and sources of ignition.
Keep away from oxidizing agents.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.

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

SECTION 7. HANDLING AND STORAGE

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- Advice on safe handling : Harmful in contact with skin.
Avoid contact with skin and eyes.
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
Ensure all equipment is electrically grounded before beginning transfer operations.
Containers should be grounded when being emptied.
Vapours may travel to areas away from work site before igniting/flashing back to Vapour source.
Keep container closed when not in use.
Handle as an industrial chemical.
- Conditions for safe storage : Avoid exposure to excessive heat, light, and air for prolonged periods of time.
Keep in a dry, cool and well-ventilated place.
Keep product and empty container away from heat and sources of ignition.
Take measures to prevent the build up of electrostatic charge.
- Materials to avoid : Keep away from strong acids.
Keep away from strong bases.
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 |

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.
- Hand protection
Material : Nitrile rubber
- Eye protection : Tightly fitting safety goggles
Safety glasses with side-shields
- Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

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Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
Clean long legged, long sleeved work clothes.
If splashing is possible, wear chemically resistant protective clothing.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : dispersion

Colour : light yellow
clear

Odour : solvent-like

Odour Threshold : No data available

pH : 5, Concentration: 10 % (68 °F (20 °C)) Method: Universal pH-value indicator

Melting point/range : < 39 °F (< 4 °C)

Initial boiling point : ca. 284 °F (140 °C)

Vapour pressure : 3.37 hPa (68 °F (20 °C))
Method: estimated

Flash point : 118 °F (48 °C)
Method: 48 (Abel-Pensky)

Upper explosion limit : No data available

Lower explosion limit : No data available

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Relative vapour density : No data available

Relative Density/Specific Gravity : No data available

Density : 1.14 g/cm³ (68 °F (20 °C))
Method: 4 (20°C oscillating U-tube)

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| | |
|--|--|
| Solubility(ies) | |
| Water solubility | : immiscible |
| Solubility in other solvents | : No data available |
| Partition coefficient: n-octanol/water | : No data available |
| Ignition temperature | : > 392 °F (> 200 °C) Method: DIN 51794 |
| Thermal decomposition | : No data available |
| Viscosity | |
| Viscosity, dynamic | : No data available |
| Viscosity, kinematic | : 9 mm ² /s (68 °F (20 °C)) |
| Surface tension | : No data available |

SECTION 10. STABILITY AND REACTIVITY

| | |
|------------------------------------|--|
| Reactivity | : Not classified as a reactivity hazard. |
| Chemical stability | : Stable; polymerization will not occur |
| Possibility of hazardous reactions | : 1-Methoxy-2-propanol acetate/1-Methoxy-2-propanol may form peroxides of unknown stability. |
| Conditions to avoid | : Prolonged heat/light/air exposure |
| Incompatible materials | : Acids and bases Strong oxidizing agents |
| Hazardous decomposition products | : None expected |

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

Inhalation
Ingestion
Eyes
Skin Absorption
Skin contact

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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
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

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: No data available

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

Species: Rabbit

Result: No eye irritation

Method: OECD Test Guideline 405

GLP: yes

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

Carcinogenicity**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.

Repeated dose toxicity**Product:**

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Remarks: No data available

Experience with human exposure**Product:**

Inhalation:

Symptoms:

High concentrations are irritating to the respiratory tract. Has caused headaches, dizziness, nausea, vomiting and CNS depression (drowsiness, loss of coordination and fatigue).

Skin contact:

Symptoms:

Contact will probably cause irritation.

Eye contact:

Symptoms:

Contact will probably cause irritation.

Ingestion:

Symptoms:

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

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**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 | : There is no data available for this product. |

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. |

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 |

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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.

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.

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

Non-volatile (Wt) : 31 %
Method: 45 (20min/150°C + 2g EA)
DIN EN ISO 3251
Non-volatile information is not a specification.

Massachusetts Right To Know

| | |
|----------------------|----------|
| 1-Methoxy-2-propanol | 107-98-2 |
|----------------------|----------|

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 | - |

New Jersey 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 | - |

New Jersey Trade Secret : 800963-5435
Registry Number for the product (NJ TSRN)

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

CONEG Heavy Metal: We confirm that we use packaging and/or packaging components in which the sum of the incidental concentration levels of lead, mercury, cadmium and hexavalent chromium do not exceed 100 parts per million by weight.

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).

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| | |
|----------------------------|--|
| Section 4 / 12(b) | : Not applicable |
| 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 | : Polymer |
| Weight percent | : 5.0 % |
| NSN Filed | : Schedule 9 |
| Max. NSN Required | : Schedule 10 |
| | Chemical |
| | 26 % |
| | None |
| | Schedule 6 |

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.