NANOBYK-3603

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SECTION 1. IDENTIFICATION

Product name : NANOBYK-3603

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
E-mail address : BRIEF.BYK.NAFTA@altana.com

Emergency telephone number : 203-265-2086; CHEMTREC 1-800-424-9300 / +1 703-527-3887

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

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H335 May cause respiratory irritation.

Precautionary statements : **Prevention:**
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271 Use only outdoors or in a well-ventilated area.
Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
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 (%)
Aluminum oxide	1344-28-1	>= 30 - < 60

The specific chemical identity/weight percent of proprietary ingredient(s) is a trade secret

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.

If inhaled : If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact : If on skin, rinse well with water.
If on clothes, remove clothes.
Wash clothing before reuse.

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.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Foam
Carbon dioxide (CO2)
Dry chemical
Foam
Carbon dioxide (CO2)

Dry chemical

Unsuitable extinguishing media	:	High volume water jet
Specific hazards during firefighting	:	Will not explode on mechanical impact. Water solution - will not support combustion.
Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NOx)
Further information	:	Keep away from oxidizing agents. Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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.
Environmental precautions	:	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	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on safe handling	:	Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.
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
Aluminum oxide	1344-28-1	TWA (Total)	10 mg/m3	OSHA P0
Aluminum oxide		TWA (Respirable fraction)	5 mg/m3	OSHA P0
Aluminum oxide		TWA (Respirable particulate matter)	1 mg/m3	ACGIH

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 : Neoprene gloves

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 : Handle in accordance with good industrial hygiene and safety practice.
Clean long legged, long sleeved work clothes.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state : dispersion
Colour : white
Odour : none
Odour Threshold : No data available

pH : 9, Concentration: 10 % (68 °F (20 °C)) Method: Universal pH-value indicator

Melting point/ range : < 39 °F (< 4 °C)
(1,013 hPa)

Boiling point/boiling range	:	212 °F (100 °C) (1,013 hPa)
Vapour pressure	:	ca. 23 hPa (68 °F (20 °C))
Flash point	:	does not flash
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Evaporation rate	:	No data available
Relative vapour density	:	No data available
Relative Density/Specific Gravity	:	No data available
Density	:	1.414 g/cm3 (68 °F (20 °C)) Method: 4 (20°C oscillating U-tube)
Bulk density	:	Not applicable
Solubility(ies)		
Water solubility	:	completely miscible
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Ignition temperature	:	Not combustible.
Thermal decomposition	:	No data available
Viscosity		
Viscosity, dynamic	:	45 mPa.s (68 °F (20 °C)) Method: P/K 20°C
Viscosity, kinematic	:	31 mm2/s (68 °F (20 °C))

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.
Conditions to avoid	:	No data available

Incompatible materials : Acids and bases
Strong oxidizing agents

Hazardous decomposition products : No data available

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Ingestion
Eyes
Skin Absorption
Skin contact

Acute toxicity

Product:

Acute oral toxicity : Remarks: No data available

Components:

1344-28-1 Aluminum oxide:

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

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

Skin corrosion/irritation

Components:

1344-28-1 Aluminum oxide:
Species: Rabbit
Result: Moderate skin irritation

Serious eye damage/eye irritation

Product:

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

Components:

1344-28-1 Aluminum oxide:
Species: Rabbit
Result: Eye irritation

Respiratory or skin sensitisation

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.

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: When in respirable form, aluminum oxide exposure has been associated with lung fibrosis. Additionally occupational aluminum oxide exposure has been associated w/neurological disorders but the evidence is inconclusive.
Since the toxicological effects of nano-sized particles of aluminum oxides have not been fully 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 heated vapors may irritate the respiratory tract and mucous membranes.

Skin contact:

Symptoms: Contact may cause irritation.

Eye contact:

Symptoms: Contact may cause irritation.

Ingestion:

Symptoms: Ingestion will probably cause irritation of the digestive tract.

Further information

Product:

Remarks: No data available

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 : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

EPA Hazardous Waste Code(s) : Not applicable.

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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

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
Not regulated as a dangerous good
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 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	39.6 %

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

Non-volatile (Wt) : 42.6 %
Method: 23 (20min/150°C)
DIN EN ISO 3251
Non-volatile information is not a specification.

Massachusetts Right To Know

Aluminum oxide	1344-28-1

Pennsylvania Right To Know

Water	7732-18-5
Aluminum oxide	1344-28-1
Polymer	Not Assigned

New Jersey Right To Know

New Jersey Trade Secret Registry Number for the product (NJ TSRN) : 800963-5244

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.

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

TSCA : All substances listed as active on the TSCA inventory

Section 5a : The following substance(s) is/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

Revision Date : 05/17/2026

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.