

**NANOBYK-3820**

Version 3

Revision Date 04/30/2015

Print Date 05/07/2015

**SECTION 1. IDENTIFICATION**

Product name : NANOBYK-3820

**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](http://www.byk.com)

E-mail address : [ehs.byk.usa@altana.com](mailto:ehs.byk.usa@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 for paints and plastics

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

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

Eye irritation : Category 2A

**GHS Label element**

Hazard pictograms :



Signal word : Warning

Hazard statements : H319 Causes serious eye irritation.

Precautionary statements : **Prevention:**  
P264 Wash skin thoroughly after handling.  
P280 Wear eye protection/ face protection.

**Response:**  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

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Chemical nature : Dispersion of zinc oxide nanoparticles

**Hazardous components**

Component	CAS-No.	Concentration (%)
Zinc compounds	1314-13-2	>= 40 - < 41

**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.
- If swallowed : Do not induce vomiting. Dilute with 1-2 glasses of water. Get medical aid.  
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 (CO<sub>2</sub>)  
Dry chemical
- Unsuitable extinguishing media : No information available.
- Specific hazards during firefighting : Cool closed containers exposed to fire with water spray.  
Will not explode on mechanical impact.
- Hazardous combustion products : Carbon oxides  
Sulphur oxides
- 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.

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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Wear protective equipment: goggles, chemically resistant clothing and gloves, and appropriate respirator if in a confined area.
- 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

- Advice on safe handling : Harmful in contact with skin.  
Avoid contact with skin and eyes.  
Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
Handle as an industrial chemical.  
Keep container tightly closed.  
Avoid contact with incompatible materials.
- Conditions for safe storage : 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 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
Zinc compounds	1314-13-2	TWA (Respirable fraction)	2 mg/m <sup>3</sup>	ACGIH
		STEL (Respirable fraction)	10 mg/m <sup>3</sup>	ACGIH
		TWA (total dust)	15 mg/m <sup>3</sup>	OSHA Z-1
		TWA (respirable)	5 mg/m <sup>3</sup>	OSHA Z-1

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		fraction)		
		TWA (Dust)	5 mg/m <sup>3</sup>	NIOSH REL
		TWA (Fumes)	5 mg/m <sup>3</sup>	NIOSH REL
		ST (Fumes)	10 mg/m <sup>3</sup>	NIOSH REL
		C (Dust)	15 mg/m <sup>3</sup>	NIOSH REL
		TWA (Fumes)	5 mg/m <sup>3</sup>	OSHA Z-1
		TWA (Total dust)	10 mg/m <sup>3</sup>	OSHA P0
		TWA (respirable dust fraction)	5 mg/m <sup>3</sup>	OSHA P0
		TWA (Fumes)	5 mg/m <sup>3</sup>	OSHA P0
		STEL (Fumes)	10 mg/m <sup>3</sup>	OSHA P0

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

**Personal protective equipment**

Respiratory protection : Unless air monitoring demonstrates vapor/mist/dust levels are below the PEL/TLV wear a properly fitted respirator (NIOSH approved) or dust mask during exposure.

Hand protection

Material : Neoprene gloves

Eye protection

: Safety Glasses  
Goggles

Skin and body protection

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

Hygiene measures

: Clean long legged, long sleeved work clothes.  
Handle in accordance with good industrial hygiene and safety practice.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : dispersion

Colour : off-white

Odour : none

Odour Threshold : No data available

pH : ca. 7

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Melting point/range	: 32 °F (0 °C) (1,013 hPa)
Boiling point/boiling range	: 212 °F (100 °C) (1,013 hPa)
Flash point	: Not applicable
Evaporation rate	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: ca. 24 hPa (68 °F (20 °C)) Method: estimated
Relative vapour density	: No data available
Relative Density/Specific Gravity	: No data available
Density	: 1.59 g/cm <sup>3</sup> (68 °F (20 °C))
Bulk density	: Not applicable
Solubility(ies)	
Water solubility	: (68 °F (20 °C), 1,013 hPa) completely miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Viscosity	
Viscosity, dynamic	: No data available
Viscosity, kinematic	: No data available
Surface tension	: ca. 72.8 mN/m, 68 °F (20 °C)

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

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Chemical stability	: Stable; polymerization will not occur
Possibility of hazardous reactions	: No data available
Conditions to avoid	: None known.
Incompatible materials	: Strong oxidizing agents Metals Peroxides
Hazardous decomposition products	: None known.

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

Skin contact  
Skin absorption  
Inhalation  
Eyes  
Ingestion

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

Acute oral toxicity : Remarks: No data available  
  
Acute toxicity estimate : > 5,000 mg/kg  
Method: Calculation method

**Components:****1314-13-2 Zinc compounds:**

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg  
  
Acute inhalation toxicity : LC50 (Rat): > 1.79 mg/l

**Skin corrosion/irritation****Product:**

Remarks: No data available

**Components:****1314-13-2 Zinc compounds:**

Species: Rabbit  
Result: Moderate skin irritation

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**Serious eye damage/eye irritation**

**Product:**

Remarks: No data available

**Components:**

**1314-13-2 Zinc compounds:**

Species: Rabbit

Result: Eye irritation

**Respiratory or skin sensitisation**

**Product:**

Remarks: No data available

**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.

**ACGIH**

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

**OSHA**

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

**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:**

Remarks: Prolonged skin contact with ingredients may cause dermatitis.

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.

**Experience with human exposure**

**Product:**

Inhalation:

Symptoms: None expected.

Skin contact:

Symptoms: Contact may cause irritation.

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Eye contact:

Symptoms:

Contact may cause irritation.

Ingestion:

Symptoms:

Ingestion may irritate 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

:

There is no data available for this product.



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**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

EPA Hazardous Waste Code(s) : Not applicable.

Waste from residues : Dispose of in accordance with applicable local/municipal, state/provincial and federal regulations.

**SECTION 14. TRANSPORT INFORMATION****International Regulation****IATA-DGR**UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(Zinc oxide)  
Class : 9  
Packing group : III  
Labels : Miscellaneous substances and articles  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964**IMDG-Code**UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(Zinc oxide)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
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 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(Zinc oxide)  
Class : 9

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Packing group : III  
 Labels : Miscellaneous substances and articles  
 ERG Code : 171  
 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**

**CERCLA Reportable Quantity**

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

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

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

**SARA 302 Extremely Hazardous Substances Reportable Quantity**

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

**SARA 311/312 Hazards** : Acute Health Hazard

**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.

Zinc compounds	1314-13-2	40 %
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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 12 (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).

**Massachusetts Right To Know**

Zinc compounds	1314-13-2
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**Pennsylvania Right To Know**

Water	7732-18-5
Zinc compounds	1314-13-2
Polymer	-

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**New Jersey Right To Know**

Water	7732-18-5
Zinc compounds	1314-13-2
Polymer	-

**New Jersey Trade Secret Registry Number for the product (NJ TSRN)** : 800963-5321

**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).

Section 4 / 12(b) : Not applicable

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.