NANOBYK-3842

Version 4 | Revision Date 05/06/2015 | Print Date 05/13/2015

SECTION 1. IDENTIFICATION

Product name : NANOBYK-3842

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 : 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 absorption of UV light

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

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 4

Eye irritation : Category 2A

Aspiration hazard : Category 1

GHS Label element

Hazard pictograms :

Signal word : Danger

Hazard statements : H227 Combustible liquid.
H304 May be fatal if swallowed and enters airways.
H319 Causes serious eye irritation.

Precautionary statements : **Prevention:**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331 Do NOT induce vomiting.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
Storage:
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

Chemical nature : Dispersion of zinc oxide nanoparticles

Hazardous components

Component	CAS-No.	Concentration (%)
Naphtha, petroleum, hydrotreated heavy	64742-48-9	>= 56 - < 57
Zinc compounds	1314-13-2	>= 40 - < 41
Polymeric Amide	-	>= 4 - < 5

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

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; 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 (NOx)
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

Advice on safe handling	:	Harmful in contact with skin. Avoid contact with skin and eyes. Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. Keep container closed when not in use. Handle as an industrial chemical.

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 strong acids.
Keep away from strong bases.
Keep away from halides.
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/m3	ACGIH
		STEL (Respirable fraction)	10 mg/m3	ACGIH
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Dust)	5 mg/m3	NIOSH REL
		TWA (Fumes)	5 mg/m3	NIOSH REL
		ST (Fumes)	10 mg/m3	NIOSH REL
		C (Dust)	15 mg/m3	NIOSH REL
		TWA (Fumes)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	10 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
		TWA (Fumes)	5 mg/m3	OSHA P0
		STEL (Fumes)	10 mg/m3	OSHA P0

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	:	Viton (R)
Eye protection	:	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.
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	:	white
Odour	:	solvent-like
Odour Threshold	:	No data available
pH	:	No data available
Melting point/range	:	No data available
Initial boiling point	:	No data available
Flash point	:	156 °F (69 °C) Method: 49 (Pensky-Martens)
Evaporation rate	:	No data available
Upper explosion limit	:	No data available
Lower explosion limit	:	No data available
Vapour pressure	:	ca. 1 hPa (68 °F (20 °C)) Method: estimated
Relative vapour density	:	No data available

Relative Density/Specific Gravity	:	No data available
Density	:	1.229 g/cm3 (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-octanol/water	:	No data available
Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, dynamic	:	5 mPa.s (68 °F (20 °C)) Method: 11 (NV, 20°C)
Viscosity, kinematic	:	4.06 mm2/s (68 °F (20 °C))
Surface tension	:	No data available
Sublimation point	:	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	:	No data available
Conditions to avoid	:	None known.
Incompatible materials	:	Acids Strong oxidizing agents halides
Hazardous decomposition products	:	None expected

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:

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

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:	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.

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.

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 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	:	yes
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
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 SubstancesReportable Quantity

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

SARA 311/312 Hazards : Acute Health Hazard
Fire 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 %

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).

Non-volatile (Wt) : 44 %
Method: 23 (20min/150°C)
DIN EN ISO 3251
Non-volatile information is not a specification.

Massachusetts Right To Know

Zinc compounds	1314-13-2

Pennsylvania Right To Know

Naphtha, petroleum, hydrotreated heavy	64742-48-9
Zinc compounds	1314-13-2
Polymeric Amide	Not Assigned

New Jersey Right To Know

Naphtha, petroleum, hydrotreated heavy	64742-48-9
Zinc compounds	1314-13-2
Polymeric Amide	Not Assigned

New Jersey Trade Secret Registry Number for the product (NJ TSRN)	:	800963-5339
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

Revision Date	:	05/06/2015

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.