SAFETY DATA SHEET

SPI-Chem™ Benzoyl Peroxide

Section 1. Identification

GHS product identifier : SPI-Chem™ Benzoyl Peroxide

Product code : 02822-BA

Other means of identification

: Benzoyl peroxide, wet with 25% water

Product type : Solid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Catalyst.

Area of application: Industrial applications, Professional applications.

Supplier's details : SPI Supplies Division Structure Probe, Inc. 206 Garfield Ave. West Chester, PA 19380

United States

Telephone: 1-(610)-436-5400

http://www.2spi.com

e-mail address of person responsible for this SDS

: SDS@2spi.com

Emergency telephone number (with hours of

operation)

: CHEMTREC

Toll Free: 1-(800)-424-9300 (USA + Canada) (24/7)

International: 1-(703)-741-5970 (24/7)

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard

(29 CFR 1910.1200).

Classification of the : H242 ORGANIC PEROXIDES - Type C substance or mixture H319 EYE IRRITATION - Category 2A

H317 SKIN SENSITIZATION - Category 1

GHS label elements

Hazard pictograms :





Signal word : Danger

Hazard statements : H242 - Heating may cause a fire.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

Precautionary statements

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Section 2. Hazards identification

Prevention: P280 - Wear protective gloves, protective clothing and eye or face protection.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition

sources. No smoking.

P220 - Keep away from clothing and other combustible materials.

P234 - Keep only in original packaging.

P261 - Avoid breathing dust.

P264 - Wash thoroughly after handling.

P272 - Contaminated work clothing must not be allowed out of the workplace.

Response: P363 - Wash contaminated clothing before reuse.

P302 + P352 - IF ON SKIN: Wash with plenty of water.

P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention. 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 or attention.

Storage : P410 - Protect from sunlight.

P411 + P235 - Store at temperatures not exceeding @%1 °C/@%2 °F. Keep cool.

P420 - Store separately.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national

and international regulations.

Hazards not otherwise

classified

: None known.

Section 3. Composition/information on ingredients

Substance/mixture

Other means of identification

: Mixture

: Benzoyl peroxide, wet with 25% water

Ingredient name	Other names	%	CAS number
dibenzoyl peroxide water	benzoyl peroxide	75	94-36-0
	-	25	7732-18-5

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Imm

: Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation

: Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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Section 4. First aid measures

Skin contact

: Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:

pain or irritation watering

Inhalation : No specific data.

Skin contact: Adverse symptoms may include the following:

irritation redness

redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician

: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: No specific treatment.

Protection of first-aiders

: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing

media

: Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).

Unsuitable extinguishing

media

: Do not use water jet.

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Section 5. Fire-fighting measures

Specific hazards arising from the chemical

: Runoff to sewer may create fire or explosion hazard. This material increases the risk of fire and may aid combustion. Heating may cause a fire. May re-ignite itself after fire is extinguished. Hazardous decomposition may occur.

Hazardous thermal decomposition products

 Decomposition products may include the following materials: carbon dioxide carbon monoxide

Special protective actions for fire-fighters

: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Remark

: May cause fire. Contact with combustible material may cause fire.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill

: Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid contamination with reactive substances. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill

Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid contamination with reactive substances. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools.

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Section 7. Handling and storage

Keep away from clothing, incompatible materials and combustible materials. Temperature control may be required. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

To avoid the risk of formation of shock-sensitive crystals or loss of stability, it is important to store the product within the recommended temperature range. Temperature control may be required. Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store at temperatures not exceeding @%1 °C/@%2 °F. Eliminate all ignition sources. Separate from reducing agents and combustible materials. Keep away from rust, iron and copper. Keep container tightly closed and sealed until ready for use. Prevent product contamination. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
dibenzoyl peroxide	ACGIH TLV (United States, 1/2023). TWA: 5 mg/m³ 8 hours. NIOSH REL (United States, 10/2020). TWA: 5 mg/m³ 10 hours. OSHA PEL (United States, 5/2018). TWA: 5 mg/m³ 8 hours.
water	None.

Biological exposure indices

None known.

Appropriate engineering controls

: If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment. Use with adequate ventilation.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

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Section 8. Exposure controls/personal protection

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Recommended: nitrile rubber, NBR: acrylonitrile-butadiene rubber

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: Air purifying half mask with organic filter with oil mist N95 filter cartridges.

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state : Solid. [Powder]

Color : White.

Odor : Not available. Not available. **Odor threshold** pН : Not applicable. **Melting point/freezing point** : Not available. **Boiling point, initial boiling** : Not available.

point, and boiling range

Flash point : Not applicable.

Flammability May cause fire. Contact with combustible material may cause fire.

: Not applicable.

Lower and upper explosion

limit/flammability limit

Vapor pressure : 0.13 kPa (1 mm Hg) : Not applicable. **Relative vapor density** : Not available. Relative density **Density** : Not available.

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Section 9. Physical and chemical properties

Solubility(ies) : Media Result
water Insoluble

Partition coefficient: n-

octanol/water

: Not applicable.

Auto-ignition temperature
Decomposition temperature
SADT

Not applicable.Not available.Not available.Not applicable.

Particle characteristics

Median particle size

: Not available.

Other information

Physical/chemical properties comments

: Explosive when dry.

Section 10. Stability and reactivity

Reactivity

Viscosity

: This product possesses explosive properties but, as packaged, will not detonate or deflagrate rapidly or undergo a thermal explosion.

Chemical stability

: The product is stable.

Possibility of hazardous reactions

: Hazardous reactions or instability may occur under certain conditions of storage or use.

Conditions may include the following:

temperature increase high temperature

Reactions may include the following:

hazardous decomposition risk of causing fire

Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid

: Avoid increased storage temperature.

Incompatible materials

: Reactive or incompatible with the following materials:

combustible materials reducing materials

copper iron rust

Reactive or incompatible with the following materials: organic materials and metals.

Flammable material

Hazardous decomposition products

: Under normal conditions of storage and use, hazardous decomposition products should

not be produced.

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Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
dibenzoyl peroxide	LC50 Inhalation Dusts and mists LD50 Oral		>24.3 mg/l 6400 mg/kg	4 hours

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
dibenzoyl peroxide	Eyes - Mild irritant	Rabbit	-	24 hours 500	-
				mg	

Sensitization

Not available.

Mutagenicity

Conclusion/Summary: Not available.

Carcinogenicity

Conclusion/Summary: Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
dibenzoyl peroxide	-	3	-

Reproductive toxicity

Conclusion/Summary: Not available.

Teratogenicity

Conclusion/Summary: Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely

routes of exposure

: Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact: Adverse symptoms may include the following:

pain or irritation watering redness

Inhalation : No specific data.

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Section 11. Toxicological information

Skin contact: Adverse symptoms may include the following:

irritation redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate : Not available.

effects

Potential delayed effects : Not available.

Long term exposure

Potential immediate : Not available.

effects

Potential delayed effects : Not available.

Potential chronic health effects

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to

very low levels.

Carcinogenicity : No known significant effects or critical hazards.
 Mutagenicity : No known significant effects or critical hazards.
 Reproductive toxicity : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	- ' '	Dermal (mg/kg)		(vapors)	Inhalation (dusts and mists) (mg/ I)
dibenzoyl peroxide	6400	N/A	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
dibenzoyl peroxide	Acute EC50 0.042 mg/l Fresh water	Algae	72 hours
	Acute EC50 0.11 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
	Acute LC50 0.06 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
	Acute NOEC 0.02 mg/l Fresh water	Algae	72 hours
	Chronic NOEC 0.001 mg/l Fresh water	Daphnia - <i>Daphnia magna</i>	21 days

Conclusion/Summary : Not available.

Persistence and degradability

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Section 12. Ecological information

Product/ingredient name	Test	Result		Dose		Inoculum
dibenzoyl peroxide	OECD 301D Ready Biodegradability - Closed Bottle Test		dily - 28 days	-		-
Product/ingredient name	Aquatic half-life		Photolysis		Biodegr	radability
dibenzoyl peroxide	-		-		Readily	

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
dibenzoyl peroxide	3.2	-	Low
water	-1.38	-	Low

Mobility in soil

Soil/water partition coefficient (K_{oc})

: Not available.

Other adverse effects

: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN3104	UN3104	UN3104
UN proper shipping name	Organic peroxide type C, solid (dibenzoyl peroxide)	ORGANIC PEROXIDE TYPE C, SOLID (dibenzoyl peroxide)	Organic peroxide type C, solid (dibenzoyl peroxide)
Transport hazard class(es)	5.2	5.2	5.2
Packing group	-	-	-

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SPI-Chem™ Benzoyl Peroxide

Section 14. Transport information

Environmental	No.	Yes.	No.
hazards			

Additional information

DOT Classification : Limited quantity Yes.

> Packaging instruction Exceptions: 152. Non-bulk: 225. Bulk: None. **Quantity limitation** Passenger aircraft/rail: 5 kg. Cargo aircraft: 10 kg.

IMDG : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.

Emergency schedules F-J, S-R Special provisions 122, 195, 274

IATA : The environmentally hazardous substance mark may appear if required by other

transportation regulations.

Quantity limitation Passenger and Cargo Aircraft: 5 kg. Packaging instructions: 570. Cargo Aircraft Only: 10 kg. Packaging instructions: 570. Limited Quantities - Passenger

Aircraft: Forbidden. Packaging instructions: Forbidden.

Special provisions A20, A150, A802

Special precautions for user : Transport within user's premises: always transport in closed containers that are

upright and secure. Ensure that persons transporting the product know what to do in the

event of an accident or spillage.

Transport in bulk according

to IMO instruments

: Not available.

Section 15. Regulatory information

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): All components are active or exempted.

Clean Air Act Section 112

(b) Hazardous Air **Pollutants (HAPs)** Not listed

Clean Air Act Section 602

Class I Substances

: Not listed

Clean Air Act Section 602

Class II Substances

: Not listed

DEA List I Chemicals

: Not listed

(Precursor Chemicals)

: Not listed

DEA List II Chemicals

(Essential Chemicals)

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ

: Not applicable.

SARA 311/312

Classification : ORGANIC PEROXIDES - Type C

> EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1

Composition/information on ingredients

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Section 15. Regulatory information

Name	%	Classification
dibenzoyl peroxide		ORGANIC PEROXIDES - Type B EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	dibenzoyl peroxide	94-36-0	75
Supplier notification	dibenzoyl peroxide	94-36-0	75

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: BENZOYL PEROXIDE

New York : None of the components are listed.

New Jersey : The following components are listed: BENZOYL PEROXIDE

Pennsylvania : The following components are listed: PEROXIDE, DIBENZOYL

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

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Section 16. Other information

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
EYE IRRITATION - Category 2A	Expert judgment Calculation method Calculation method

History

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: 1

Prepared by

: Sphera Solutions

Key to abbreviations

: ATE = Acute Toxicity Estimate

AMP = Acceptable maximum peak above the acceptable ceiling concentration for an

8-hr shift

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as

modified by the Protocol of 1978. ("Marpol" = marine pollution)

N/A = Not available UN = United Nations

References : HCS (U.S.A.) - Hazard Communication Standard

International transport regulations

✓ Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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