SAFETY DATA SHEET



ASPHALTENE GUARD

Section 1. Identification

GHS product identifier : ASPHALTENE GUARD

Product category(ies) : Oil and gas.

Other means of identification : Ceramic Proppant; Semi-Crystalline Alumina Silicate; Sintered Kaolinite.

Product type : Solid.

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

Proppant for oil and natural gas well hydraulic fracturing.

Supplier's details : CARBO Ceramics Inc.

5050 Westway Park Blvd, Suite 150 Houston, Texas 77041, USA

1-800-551-3247

Emergency telephone number

(with hours of operation)

: For Chemical Emergency

Spill, Leak, Fire, Exposure, or Accident

Call CHEMTREC Day or Night

Within USA and Canada: 1-800-424-9300

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 substance

or mixture

: RESPIRATORY SENSITIZATION - Category 1

SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

GHS label elements

Hazard pictograms



Signal word : Dange

Hazard statements : May cause an allergic skin reaction.

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Suspected of causing cancer.

May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been

read and understood. Wear protective gloves, protective clothing and eye or face protection. Wear respiratory protection. Do not breathe dust. Contaminated work clothing must not be

allowed out of the workplace.

Response : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh

air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of

water. If skin irritation or rash occurs: Get medical advice or attention.

Storage : Store locked up.

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

international regulations.

Hazards not otherwise

classified

: None known.

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Section 3. Composition/information on ingredients

Substance/mixture: Article.

CAS number/other identifiers

Ingredient name	%	CAS number
Distillates (petroleum), hydro- treated light	5 - 20	64742-47-8
Proprietary polymer coating 1	Proprietary	-
Proprietary polymer coating 2	Proprietary	-

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 as hazardous to health or the environment 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: 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 it is

suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical

surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.

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. 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 : No known significant effects or critical hazards.

Inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact: May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:

wheezing and breathing difficulties

asthma

Skin contact : Adverse symptoms may include the following:

irritation redness

Ingestion : No specific data.

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

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Section 4. First aid measures

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The

exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is

suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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

Unsuitable extinguishing

media

: Use an extinguishing agent suitable for the surrounding fire.

: None known.

Specific hazards arising from

the chemical

Hazardous thermal decomposition products

: No specific fire or explosion hazard.

: Decomposition products may include the following materials:

carbon dioxide carbon monoxide nitrogen oxides metal oxide/oxides

Special protective actions for fire-fighters

Special protective equipment 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.

: Fire-fighters should wear appropriate protective equipment and self-contained breathing

apparatus (SCBA) with a full face-piece operated in positive pressure mode.

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. 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

Large spill

: Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal

contractor.

: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. 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.

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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 or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. 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

: Store in accordance with local regulations. 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 locked up. Keep container tightly closed and sealed until ready for use. 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
Distillates (petroleum), hydro- treated light	ACGIH TLV (United States, 3/2020). Absorbed
	through skin.
	TWA: 200 mg/m³, (as total hydrocarbon vapor) 8
	hours.
Proprietary polymer coating 1	ACGIH TLV (United States, 3/2020).
	TWA: 0.005 ppm 8 hours.
	OSHA PEL 1989 (United States, 3/1989).
	CEIL: 0.02 ppm
	CEIL: 0.2 mg/m ³
	NIOSH REL (United States, 10/2016).
	TWA: 0.05 mg/m ³ 10 hours.
	TWA: 0.005 ppm 10 hours.
	CEIL: 0.2 mg/m ³ 10 minutes.
	CEIL: 0.02 ppm 10 minutes.
	OSHA PEL (United States, 5/2018).
	CEIL: 0.02 ppm
	CEIL: 0.2 mg/m ³
Proprietary polymer coating 2	None.

Appropriate engineering controls

: Use only with adequate ventilation. 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.

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: safety glasses with side-shields.

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.
- 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.

Section 9. Physical and chemical properties

Appearance

Physical state: Solid. [Solid spheres.]Color: Light gray to light tan.

Odor : Odorless. Odor threshold : Not applicable. μH : Not applicable. : 2204.5°C (4000.1°F) Melting point **Boiling point** : Not available. Flash point Not applicable. Not available. **Evaporation rate** : Not available. Flammability (solid, gas) Lower and upper explosive : Not applicable.

(flammable) limits

Vapor pressure: Not available.Vapor density: Not applicable.

Relative density : 2.6

Solubility : Not available.

Solubility in water : Not applicable.

Partition coefficient: n-octanol/ : Not applicable.

water

Auto-ignition temperature: Not applicable.Decomposition temperature: Not available.Viscosity: Not applicable.Flow time (ISO 2431): Not available.

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Section 10. Stability and reactivity

Reactivity : Not considered to be reactive.

Chemical stability : The product is stable.

Possibility of hazardous

reactions

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

Conditions to avoid : No specific data.

Incompatible materials : Strong oxidizer

Hazardous decomposition

products

: Under normal conditions of storage and use, hazardous decomposition products should not be

produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Proprietary polymer coating 1	LD50 Oral	Rat	9200 mg/kg	-
Proprietary polymer coating 2	LC50 Inhalation Vapor	Rat	490 mg/m ³	4 hours
	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	49 g/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Proprietary polymer coating 1	Eyes - Moderate irritant	Rabbit	-	100 mg	-
Proprietary polymer coating 2	Eyes - Mild irritant	Rabbit	-	100 mg	-

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
Proprietary polymer coating 1	-	3	-
Proprietary polymer coating 2	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Proprietary polymer coating 1	Category 3	-	Respiratory tract
			irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Proprietary polymer coating 1	Category 2	-	-

Aspiration hazard

Name	Result
Distillates (petroleum), hydro- treated light	ASPIRATION HAZARD - Category 1

Information on the likely routes : Not available.

of exposure

Potential acute health effects

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Section 11. Toxicological information

Eye contact: No known significant effects or critical hazards.

Inhalation : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

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 : No specific data.

Inhalation : Adverse symptoms may include the following:

wheezing and breathing difficulties

asthma

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 effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General: May cause damage to organs through prolonged or repeated exposure. Once sensitized, a

severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity: No known significant effects or critical hazards.Teratogenicity: No known significant effects or critical hazards.Developmental effects: No known significant effects or critical hazards.Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

teace toxicity commutes					
Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
ASPHALTENE GUARD	N/A	N/A	N/A	28.1	N/A
Proprietary polymer coating 1	9200	N/A	N/A	N/A	1.5
Proprietary polymer coating 2	49000	N/A	N/A	0.49	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Distillates (petroleum), hydro- treated light	Acute LC50 2200 μg/l Fresh water	Fish - Lepomis macrochirus	4 days

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Proprietary polymer coating 1	4.51	200	low

Section 12. Ecological information

Mobility in soil

Soil/water partition coefficient (Koc)

: 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	Not available.	Not available.	Not available.	Not available.	Not available.
UN proper shipping name	Not available.	Not available.	Not available.	Not available.	Not available.
Transport hazard class(es)	Not available.	Not available.	Not available.	Not available.	Not available.
Packing group	-	-	-	-	-
Environmental hazards	No.	No.	No.	No.	No.

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

: Not available.

IMO instruments

Section 15. Regulatory information

U.S. Federal regulations

: TSCA 8(a) PAIR: Proprietary polymer coating 1

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

 $\textbf{TSCA 8(c) calls for record of SAR:} \ Proprietary \ polymer \ coating \ 1; \ Proprietary \ polymer \ coating \ 2$

Clean Water Act (CWA) 307: Proprietary polymer coating 1

Clean Air Act Section 112(b) Hazardous Air Pollutants : Listed

(HAPs)

Clean Air Act Section 602 Class

: Not listed

I Substances

Clean Air Act Section 602 Class : Not listed

II Substances

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Section 15. Regulatory information

DEA List I Chemicals (Precursor: Not listed

Chemicals)

DEA List II Chemicals (Essential: Not listed

Chemicals) SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : RESPIRATORY SENSITIZATION - Category 1

SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2

SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Composition/information on ingredients

Name	%	Classification
Distillates (petroleum), hydro-	≥10 - ≤25	FLAMMABLE LIQUIDS - Category 3
treated light		ASPIRATION HAZARD - Category 1
Proprietary polymer coating 1	ietary polymer coating 1 Proprietary ACUTE TOXICITY (inhalation) - Category 4	
		SKIN IRRITATION - Category 2
		EYE IRRITATION - Category 2A
		RESPIRATORY SENSITIZATION - Category 1
		SKIN SENSITIZATION - Category 1
		CARCINOGENICITY - Category 2
		SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory
		tract irritation) - Category 3
		SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
Proprietary polymer coating 2	Proprietary	ACUTE TOXICITY (inhalation) - Category 1
		EYE IRRITATION - Category 2B

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Proprietary polymer coating 1 Proprietary polymer coating 2		Proprietary Proprietary
Supplier notification	Proprietary polymer coating 1 Proprietary polymer coating 2		Proprietary Proprietary

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: Proprietary polymer coating 1
 New York : The following components are listed: Proprietary polymer coating 1

New Jersey : The following components are listed: Proprietary polymer coating 1; Proprietary polymer

coating 2

Pennsylvania : The following components are listed: Proprietary polymer coating 1

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.

Inventory list

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Section 15. Regulatory information

Australia : All components are listed or exempted.
Canada : All components are listed or exempted.
China : All components are listed or exempted.

Europe : Not determined.

Japan : Japan inventory (CSCL): Not determined.

Japan inventory (ISHL): Not determined.

New Zealand: All components are listed or exempted.Philippines: All components are listed or exempted.Republic of Korea: All components are listed or exempted.Taiwan: All components are listed or exempted.

Thailand : Not determined.
Turkey : Not determined.

United States : All components are active or exempted.

Viet Nam : Not determined.

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.

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



Procedure used to derive the classification

Classification	Justification
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method

<u>History</u>

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Key to abbreviations : ATE = Acute Toxicity Estimate

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 SGG = Segregation Group

Section 16. Other information

UN = United Nations

References : Not available.

▼ 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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