

Material Safety Data Sheet

Creation Date 29-May-2009

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Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name OptiBind® Polystyrene Microparticles

Cat No. OptiBind® Series: 1000, 1100, 1200, 1900, 2000, 5100, 6100, 6900, 7100, 8100, 9100

Synonyms No information available.

Recommended Use In vitro diagnostic

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2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

May cause eye, skin, and respiratory tract irritation . Possible cancer hazard. May cause cancer based on animal data.
The toxicological properties have not been fully investigated.

Appearance White

Physical State Liquid.

Odor No information available

Target Organs Liver, Kidney, Blood

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes

May cause irritation.

Skin

May cause irritation. May be harmful in contact with skin.

Inhalation

May cause irritation. May be harmful if inhaled.

Ingestion

May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

Possible cancer hazard based on tests with laboratory animals. Tumorigenic effects have been reported in experimental animals.. Experiments have shown reproductive toxicity effects on laboratory animals. Mutagenic effects have occurred in humans.. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Kidney disorders. Liver disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Haz/Non-haz

Component	CAS-No	Weight %
Polystyrene solids	9003-53-6	10 to 40
Styrene monomer	100-42-5	<0.6
Surfactant	NONE	<1.0
Water	7732-18-5	<60 to < 90
Sodium azide	26628-22-8	0.0 to 0.09

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention immediately if symptoms occur.
Ingestion	Do not induce vomiting. Obtain medical attention.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	Not applicable
Method	No information available.
Autoignition Temperature	No information available.
Explosion Limits	
Upper	No data available
Lower	No data available
Suitable Extinguishing Media	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire..
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

NFPA **Health 1** **Flammability 0** **Instability 0** **Physical hazards N/A**

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable and closed containers for disposal. Do not flush down the drain. Sodium azide may react with plumbing systems to form highly explosive compounds.

7. HANDLING AND STORAGE

Handling Use only under a chemical fume hood. Ensure adequate ventilation. Wear personal protective equipment. Do not breathe vapors or spray mist. Do not get in eyes, on skin, or on clothing. Do not flush down the drain. Sodium azide may react with plumbing systems to form highly explosive compounds.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep at temperatures between 2 and 8°C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Measures Ensure adequate ventilation, especially in confined areas. Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Styrene monomer	= 20 ppm TWA = 40 ppm STEL	= 215 mg/m ³ TWA = 50 ppm TWA = 200 ppm Ceiling = 100 ppm STEL = 425 mg/m ³ STEL = 100 ppm TWA	= 700 ppm IDLH = 50 ppm TWA = 215 mg/m ³ TWA = 425 mg/m ³ STEL = 100 ppm STEL
Sodium azide	= 0.11 ppm Ceiling hydrazoic acid vapor = 0.29 mg/m ³ Ceiling NaN ₃	Prevent or reduce skin absorption = 0.1 ppm Ceiling HN ₃ = 0.3 mg/m ³ Ceiling NaN ₃	= 0.3 mg/m ³ Ceiling NaN ₃ = 0.1 ppm Ceiling HN ₃

Component	Quebec	Mexico OEL (TWA)	Ontario TWA EV
Styrene monomer	= 213 mg/m ³ TWA EV = 50 ppm TWA EV = 100 ppm STEV = 426 mg/m ³ STEV Skin designation	= 50 ppm TWA = 215 mg/m ³ TWA = 425 mg/m ³ STEL = 100 ppm STEL	= 35 ppm TWA EV = 100 ppm STEV

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Sodium azide	= 0.11 ppm Ceiling = 0.3 mg/m ³ Ceiling		= 0.1 ppm CEV = 0.26 mg/m ³ CEV

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	White
Odor	No information available
Odor Threshold	No information available.
pH	Not applicable
Vapor Pressure	No information available.
Vapor Density	No information available.
Viscosity	No information available.
Boiling Point/Range	Not applicable
Melting Point/Range	No information available.
Decomposition temperature °C	No information available.
Flash Point	Not applicable
Evaporation Rate	No information available.
Specific Gravity	No information available.
Solubility	No information available.
log Pow	No data available

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions. Stable under recommended storage conditions.
Conditions to Avoid	Excess heat.
Incompatible Materials	None known
Hazardous Decomposition Products	None known
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions .	Do not flush down the drain. Sodium azide may react with plumbing systems to form highly explosive compounds.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Styrene monomer	= 11.8 mg/L Inhalation LC50 Rat 4 h = 1000 mg/kg Oral LD50 Rat = 11.8 mg/L Inhalation LC50 Rat 4 h	= 1000 mg/kg Oral LD50 Rat = 11.8 mg/L Inhalation LC50 Rat 4 h	= 11.8 mg/L Inhalation LC50 Rat 4 h = 1000 mg/kg Oral LD50 Rat = 11.8 mg/L Inhalation LC50 Rat 4 h
Sodium azide	= 50 mg/kg Dermal LD50 Rat = 27 mg/kg Oral LD50 Rat = 20 mg/kg Dermal LD50 Rabbit = 50 mg/kg Dermal LD50 Rat	= 20 mg/kg Dermal LD50 Rabbit = 27 mg/kg Oral LD50 Rat = 50 mg/kg Dermal LD50 Rat	= 50 mg/kg Dermal LD50 Rat = 27 mg/kg Oral LD50 Rat = 20 mg/kg Dermal LD50 Rabbit = 50 mg/kg Dermal LD50 Rat

Irritation No information available.

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Mexico
Styrene monomer	A4 - Not Classifiable as a Human Carcinogen	2B	Not listed	Present	Not listed
Sodium azide	A4 - Not Classifiable as a Human Carcinogen	Not listed	Not listed	Not listed	Not listed

ACGIH: (American Conference of Governmental Industrial Hygienists)

- A1 - Known Human Carcinogen
- A2 - Suspected Human Carcinogen
- A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

- Group 1 - Carcinogenic to Humans
- Group 2A - Probably Carcinogenic to Humans
- Group 2B - Possibly Carcinogenic to Humans

OSHA: (Occupational Safety & Health Administration)

- OSHA: (Occupational Safety & Health Administration)
- X - Present

Sensitization No information available.

Mutagenic Effects Mutagenic effects have occurred in humans.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects Developmental effects have occurred in experimental animals.

Teratogenicity Teratogenic effects have occurred in experimental animals..

Other Adverse Effects Tumorigenic effects have been reported in experimental animals.. The toxicological properties have not been fully investigated.. See actual entry in RTECS for complete information.

Endocrine Disruptor Information

Component	EU - Endocrine Disruptors Candidate List	EU - Endocrine Disruptors - Evaluated Substances	Japan - Endocrine Disruptor Information
Styrene monomer	Group I Chemical	High Exposure Concern	Not applicable

12. ECOLOGICAL INFORMATION

Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Styrene monomer	= 0.72 mg/L EC50 Selenastrum capricornutum 96 h = 1.4 mg/L EC50 Selenastrum capricornutum 72 h	= 25.05 mg/L LC50 Lepomis macrochirus 96 h static = 29 mg/L LC50 Pimephales promelas 96 h static = 4.02 mg/L LC50 Pimephales promelas 96 h flow-through	= 5.4 mg/L EC50 Photobacterium phosphoreum 5 min	= 4.7 mg/L EC50 Daphnia magna 48 h
Sodium azide	Not listed	= 0.7 mg/L LC50 Lepomis macrochirus 96 h = 0.8 mg/L LC50 Oncorhynchus mykiss 96 h = 5.46 mg/L LC50 Pimephales promelas 96 h flow-through	Not listed	Not listed

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility

Component	log Pow
Styrene monomer	= 2.95

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

14. TRANSPORT INFORMATION

DOT Not regulated

TDG Not regulated

IATA Not regulated

14. TRANSPORT INFORMATION

IMDG/IMO Not regulated

15. REGULATORY INFORMATION

All of the components in the product are on the following Inventory lists: All of the components in the product are on the following Inventory lists:

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Polystyrene solids	XU	Present	-	-	-	NLP No. 500-008-9	Present	6-120	Present	Present	KE-13257
Styrene monomer	Present	Present	-	202-851-5	-		Present	3-4	Present	Present	KE-35342
Sodium azide	Present	Present	-	247-852-1	-		Present	1-482	Present	Present	KE-31357

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Styrene monomer	100-42-5	<0.6	= 0.1 % de minimis concentration
Sodium azide	26628-22-8	0.0 to 0.09	= 1.0 % de minimis concentration

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Styrene monomer	Present	= 1000 lb RQ	-	-

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Styrene monomer	Present		-

OSHA

Not applicable

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Styrene monomer	= 1000 lb final RQ = 454 kg final RQ	-
Sodium azide	= 1000 lb final RQ = 454 kg final RQ	= 1000 lb EPCRA RQ

California Proposition 65

This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Polystyrene solids	-	sn 2700 (expanded, mixture with flammable liquid)	-	-	-
Styrene monomer	Carcinogen; Extraordinarily hazardous	sn 1748	Environmental hazard	Present	Toxic; Flammable
Sodium azide	Extraordinarily hazardous	sn 1684	Environmental hazard	-	Toxic

U.S. Department of Transportation

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

D2A Very toxic materials

D2B Toxic materials



16. OTHER INFORMATION

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Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS