SHOBN™ UHP

Safety Data Sheet

According to the Hazard Communication Standard (HCS) (29 CFR 1910.1200)

Issue date: 04/01/2024 Revision date: - Supersedes: - Version: 3.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture

Trade name : SHOBN™ UHP

Reference No. : CE-US330EN

1.2. Recommended use and restrictions on use

Recommended use : Industrial use

Restrictions on use : Not to be used for any purpose other than the one the product was designed for

1.3. Supplier

Importer
Resonac America, Inc.
2150 North First Street, Suite 350, San Jose, CA 95131, U.S.A.

T +1 408-873-2200 (Monday - Friday 09:00 - 17:00 Pacific)

Manufacturer
Resonac Corporation Marketing Department, Ceramics Business Unit
Tokyo Shiodome Building, 1-9-1 Higashi-Shimbashi, Minato-ku, Tokyo, 105-7325, Japan
T +81-263-52-0182 - F +81-263-52-2995
rec_cera.div@resonac.com

1.4. Emergency telephone number

Country	Emergency number
USA	CHEMTREC, USA （Customer number：CCN10573） U.S.A. Domestic call : 1-800-424-9300 International call : +1-703-741-5970

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Reproductive toxicity, Category 1B H360 May damage fertility or the unborn child.

2.2. GHS Label elements, including precautionary statements

Labelling elements according to OSHA HCS 2012

Symbol(s) :

Signal word (GHS US) : Danger

Hazard statement(s) : H360 - May damage fertility or the unborn child.

Precautionary statements (GHS US) : P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : Ammonia water and boracic acid are formed by the hydrolytic cleavage.

2.4. Unknown acute toxicity (GHS US)

No additional information

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Formula	Product identifier	%
Boron nitride	BN	(CAS-No.) 10043-11-5	≥ 99.5
Diboron trioxide	B_2O_3	(CAS-No.) 1303-86-2	< 0.3

SECTION 4: First-aid measures

4.1. Description of first aid measures

inhalation : Remove person to fresh air and keep comfortable for breathing. Seek immediate medical advice.

skin contact : Wash off immediately with soap and plenty of water.

eye contact : Wash immediately with plenty water (during 20minutes), also under eyelids. Remove contact lenses, if present and easy to do. Continue rinsing. Ask for urgent medical help even if there are no visible symptoms.

ingestion : Rinse mouth with water, do not induce vomiting, and call a doctor.

4.2. Most important symptoms and effects (acute and delayed)

No additional information available

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : ABC-powder. dry sand. carbon dioxide (CO_2).

Unsuitable extinguishing media : Nothing in particular.

5.2. Specific hazards arising from the chemical

No additional information available

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : When fire, only authorized personnel can access to this area. When exposed to water in high temperature atmosphere, having be involved the risk of hydrolyzation forms and generates NH_3 gas. Must pay attention, when watering to a lot of products in high temperature.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Wear suitable protective clothing, gloves and eye or face protection.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Avoid raising dust. Pay attention that products never flow out to river etc. and never cause influence to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Dispose after raking up by scoops and cleaners, etc.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Make handling to avoid forming an aerosol and a powder dust. Operate the local exhaust ventilation. Wear the dust mask, protective glasses, protective glove, working jacket etc.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store under the dry condition in cool and dark space.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

SHOBN™ UHP		
Japan	Japan administration level	3mg/m³ (In the case of a free hydrated silica 0%)
Japan	Exposure limits (JSOH)	Inhalant dust 1mg/m^3, Total dust 4mg/m^3.

Boron nitride (10043-11-5)
Not applicable

Diboron trioxide (1303-86-2)		
ACGIH	ACGIH TWA (mg/m³)	10mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	15mg/m³ (total dust)
IDLH	US IDLH (mg/m³)	2000mg/m³
NIOSH	NIOSH REL (TWA) (mg/m³)	10mg/m³

8.2. Appropriate engineering controls

Appropriate engineering controls : Install the local exhaust ventilation in handling area.

8.3. Individual protection measures/Personal protective equipment

Hand protection: protective gloves

Eye protection: In case of dust production: protective goggles. Protective glasses

Skin and body protection: Normal overalls

Respiratory protection: Approved dust respirator

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Solid
Appearance : Powder.
Colour : white light yellow
Odour : odourless slight ammonia
Odor threshold : No data available
pH : not applicable
Melting point / Freezing point : No data available
Boiling point : No data available
Flash point : No data available
Evaporation rate : No data available
Flammability (solid, gas) : Not flammable.
Vapour pressure : 50 Pa (1800°C)
Relative vapour density at 20°C : No data available
Relative density : 2.27
Solubility : Poorly-soluble in water. And no data available in the case of other solvent.
Partition coefficient n-octanol/water (Log Pow) : No data available
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Explosive limits : No data available
Explosive properties : No explosion.
Oxidising properties : Not oxidising.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Oxidative reaction starts with more than 950°C in the atmosphere.

10.3. Possibility of hazardous reactions

NH_3 is formed by hydrolytic cleavage with damp air, boiling water or dilute acid. Not decompose under the inert atmosphere below about 3000°C. Boracic acid is formed by oxidation reaction gradually more than a few hundred °C in the oxidant atmosphere.

10.4. Conditions to avoid

Store away from heat/moisture.

10.5. Incompatible materials

Water. Oxidizing agent.

10.6. Hazardous decomposition products

Ammonia water and boracic acid are formed by the hydrolytic cleavage.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) Classification not possible
Acute toxicity (Inhalation) Not classified

Boron nitride (hexagonal) (10043-11-5)	
Acute toxicity (Oral)	Rat LD50 >5000mg/kg (ECHA)
Acute toxicity (Inhalation: dust)	Rat LC50 (4hr) >5.3mg/L (ECHA)

Diboron trioxide (1303-86-2)	
Acute toxicity (Oral)	Rat LD50 3150mg/kg (RTECS)
	Mouse LD50 3163mg/kg (ACGIH, HSDB)
Acute toxicity (Inhalation: dust)	Rat LCLo (2hr) 150mg/m^3 (RTECS)

Skin corrosion/irritation : Not classified
pH: not applicable

Boron nitride (hexagonal) (10043-11-5)	
Skin corrosion/irritation	Rabbit, Skin irritation test (applied for 24hours): No irritation (Erythema and edema recovered within 72hours; PDII, 1.9) (ECHA)

Diboron trioxide (1303-86-2)	
Skin corrosion/irritation	Rabbit, Skin irritation test: Irritation (erythema) (ACGIH)
	Skin exposure (excessive amount): Erythema of the skin (HSDB)

Serious eye damage/irritation : Not classified
pH: not applicable

Boron nitride (hexagonal) (10043-11-5)	
Serious eye damage/irritation	Rabbit, Eye irritation test: No irritation (mild conjunctival redness; recovered within 48hours) (ECHA)

Diboron trioxide (1303-86-2)	
Serious eye damage/irritation	Rabbit, Eye irritation test: Conjunctivitis (ACGIH)
	Occupational exposure (mean concentration 4.1mg/m^3): Eye irritation, etc. (ACGIH)

Respiratory sensitisation : Classification not possible
Skin sensitisation : Not classified

Boron nitride (hexagonal) (10043-11-5)	
Skin sensitization	Guinea pig, Skin sensitization test (Buehler test): Negative (ECHA)

Germ cell mutagenicity : Not classified

Diboron trioxide (1303-86-2)	
Germ cell mutagenecity	(Borate) Mouse, Oral administration, in vivo Micronucleus test: Negative (Initial Risk Assessment Report [NEDO])
	(Borate) S. typhimurium, Ames test: Negative (Initial Risk Assessment Report [NEDO])

Carcinogenicity : Not classified

Boron nitride (hexagonal) (10043-11-5)	
Carcinogenicity	(No information on crystallinity and shape) Rat, Chronic inhalation test: Increase incidence of lung tumor/mesothelioma (MSDS-OHS)
	Hamster/Rat, Intraperitoneal administration test: Increase incidence of tumor (fiber length/dose dependent) (MSDS-OHS)

Diboron trioxide (1303-86-2)	
Carcinogenicity	(Borate) Mouse, 103-week Dietary administration test: No increase in tumor incidence (Initial Risk Assessment Report [NEDO])
	(Borate) Rat, 2-year Dietary administration test: No incidence of tumor (Initial Risk Assessment Report [NEDO])

Reproductive toxicity : May damage fertility or the unborn child.

Diboron trioxide (1303-86-2)	
Reproductive toxicity	Rat, Inhalation toxicity test (77mg/m^3 for 24weeks, 470mg/m^3 for 10weeks): No effects on the ovaries or testes (ATSDR)
	(Boric acid) Rat/Mouse, Dietary toxicity test: Decreased fertility, increased malformations (Initial Risk Assessment Report [NEDO])

STOT-single exposure : Not classified

Boron nitride (hexagonal) (10043-11-5)	
Specific target organ toxicity (single exposure)	Rat, Oral toxicity test; 5000mg/kg: No abnormalities (ECHA)
	Rat, 4-hour inhalation toxicity test; 1.1 to 6.2mg/L: Labored breathing; 5.3mg/m^3 or higher: Congestion of the lung, or deaths (ECHA)

Diboron trioxide (1303-86-2)	
Specific target organ toxicity (single exposure)	Worker exposure (mean concentration 4.1mg/m^3): Respiratory irritation, etc. (ACGIH)
	Oral ingestion: Abdominal cramping, diarrhea, nausea, vomiting, shock (HSDB)
	Inhalation exposure (fume): May cause hyperthermia, shortness of breath, dizziness, diplopia, and severe myalgia (MSDS-OHS)

STOT-repeated exposure : Not classified

Boron nitride (hexagonal) (10043-11-5)	
Specific target organ toxicity (repeated exposure)	(Unknown crystal structure and shape) Rat, 6-month inhalation toxicity test: Catarrhal-desquamative bronchitis, emphysema and moderately pronounced diffuse lung fibrosis ; TCLo, 100mg/m^3 (MSDS-OHS)

Diboron trioxide (1303-86-2)	
Specific target organ toxicity (repeated exposure)	Rat, Inhalation toxicity test (77mg/m^3 for 24weeks, 470mg/m^3 for 10weeks): 470mg/m^3; Mild nose irritation (ATSDR)
	Repeated or long-term oral ingestion: May cause gastroenteritis, nausea, kidney injury, etc. (MSDS-OHS)

Aspiration hazard : Classification not possible

SECTION 12: Ecological information

12.1. Ecotoxicity

Ecotoxicity

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : Not classified

Diboron trioxide (1303-86-2)	
Ecotoxicity	(Borate) Fish (Gold fish) LC50 (3days) 0.57g/L (IUCLID)
	Fish (Rainbow trout: fertilized egg) NOEC (87days) 2.1mg (B) /L (Environmental Risk Assessment [MOE])
	Crustacea (Daphnia magna) LC50 (48hr) 370 - 490mg/L (IUCLID)
	Crustacea (Daphnia magna) NOEC (21days) 6mg (B) /L (Environmental Risk Assessment [MOE])

12.2. Persistence and degradability

SHOBN™ UHP	
Persistence and degradability	No additional information

12.3. Bioaccumulative potential

SHOBN™ UHP	
Bioaccumulation	No additional information

12.4. Mobility in soil

SHOBN™ UHP	
Ecology - soil	No additional information

12.5. Other adverse effects

Hazardous to the ozone layer

SHOBN™ UHP	
Ozone	Classification not possible

SECTION 13: Disposal considerations

13.1. Disposal methods

waste materials : Dispose of contents/container under national government /prefectural and city governments /cities, towns and villages regulations. Treat as industrial waste 'sludge'.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Not regulated

Transportation of Dangerous Goods

Not regulated

Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

Boron nitride (10043-11-5)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

Diboron trioxide (1303-86-2)
Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

Boron nitride (10043-11-5)
Listed on the Canadian DSL (Domestic Substances List)

Diboron trioxide (1303-86-2)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Boron nitride (10043-11-5)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Diboron trioxide (1303-86-2)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

Boron nitride (10043-11-5)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

Diboron trioxide (1303-86-2)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on KECL/KECI (Korean Existing Chemicals Inventory) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on the Japanese ISHL (Industrial Safety and Health Law) Listed on INSQ (Mexican National Inventory of Chemical Substances) Listed on the TCSI (Taiwan Chemical Substance Inventory)

15.3. US State regulations

SHOBN™ UHP	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Yes

Boron nitride (10043-11-5)
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term

Diboron trioxide (1303-86-2)
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Minnesota - Hazardous Substance List
U.S. - Massachusetts - Right To Know List
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - Minnesota - Chemicals of High Concern
U.S. - California - Safer Consumer Products - Initial List of Candidate Chemicals and Chemical Groups

SECTION 16: Other information, including date of preparation or last revision

Issue date : 04/01/2024

Revision date : -(no previous ver.)

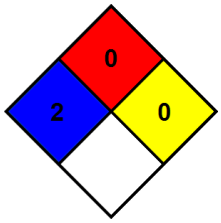
Supersedes : -

Version : 3.0

NFPA health hazard : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

NFPA fire hazard : 0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 0 Minimal Hazard - Materials that will not burn

Physical : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors.

Personal protection : F

F - Safety glasses, Gloves, Synthetic apron, Dust respirator

Information in the SDS was obtained from sources which we believe to be reliable, but no warranty or representation regarding the accuracy or completeness is hereby granted. Users must perceive information here only as an addition to the information collected by themselves and must decide for itself the suitability and completeness of information from all sources to ensure the correct use and disposal, the safety and health of employees and customers and environmental protection.