SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date	27-Oct-2021	**Previous revision date**	30-Oct-2020	**Revision Number**	1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Name MICROBEAD SUSPENSION - #10256

Safety data sheet number 10256

Pure substance/mixture Mixture

Contains Boric acid (H3BO3), Borax (B4Na2O7.10H2O)

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

Recommended use For research use only

Uses advised against No information available

1.3. Details of the supplier of the safety data sheet

Corporate Headquarters
Bio-Rad Laboratories Inc.
1000 Alfred Nobel Drive
Hercules, CA 94547
USA

Manufacturer
Bio-Rad
Endeavour House
Langford Business Park
Kidlington
Oxford
OX5 1GE
United Kingdom
e-mail:
antibody_safetydatasheets@bio-rad.com

Legal Entity / Contact Address
Bio-Rad Laboratories Ltd
The Junction
Station Road
Watford, WD17 1ET
UK

For further information, please contact

Technical Service 00800 00246 723
Techsupport.UK@bio-rad.com

1.4. Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC UK: 44-870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Carcinogenicity	Classification not possible
Reproductive toxicity	Category 1B - (H360)

2.2. Label elements

Contains Boric acid (H3BO3), Borax (B4Na2O7.10H2O)

Signal word
Danger

Hazard statements
H360 - May damage fertility or the unborn child

Precautionary Statements - EU (§28, 1272/2008)
P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

2.3. Other hazards

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable

3.2 Mixtures

Chemical name	Weight-%	REACH registration number	EC No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Boric acid (H3BO3) 10043-35-3	0.3 - 0.999	No data available	233-139-2	Repr. 1B (H360FD)	Repr. 1B :: C>=0.1%	-	-
Borax (B4Na2O7.10H2O) 1303-96-4	0.1 - 0.299	No data available	-	Repr. 1B (H360FD)	Repr. 1B :: C>=0.1%	-	-
Sodium azide 26628-22-8	0.01 - 0.099	No data available	247-852-1	Acute Tox. 2 (H300) Acute Tox. 1 (H310) (EUH032) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	-	-	-

Full text of H- and EUH-phrases: see section 16

Acute Toxicity Estimate
No information available

This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Chemical name	CAS No	SVHC candidates
Boric acid (H3BO3)	10043-35-3	X
Borax (B4Na2O7.10H2O)	1303-96-4	X

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance.

Inhalation Remove to fresh air.

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin contact Wash skin with soap and water. In the case of skin irritation or allergic reactions see a physician.

Ingestion Rinse mouth.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical No information available.

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Store locked up.

7.3. Specific end use(s)

Identified uses
Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	Austria	Belgium	Bulgaria	Croatia
Boric acid (H3BO3) 10043-35-3	-	-	-	TWA: 5.0 mg/m³	-
Borax (B4Na2O7.10H2O) 1303-96-4	-	-	-	TWA: 5.0 mg/m³	TWA: 5 mg/m³
Sodium azide 26628-22-8	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ *	TWA: 0.1 mg/m³ STEL 0.3 mg/m³ H*	-	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³ K*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ K*

Chemical name	Cyprus	Czech Republic	Denmark	Estonia	Finland
Borax (B4Na2O7.10H2O) 1303-96-4	-	-	TWA: 2 mg/m³ H*	TWA: 2 mg/m³ STEL: 5 mg/m³ A*	-
Sodium azide 26628-22-8	-	-	TWA: 0.1 mg/m³ H*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ A*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ iho*

Chemical name	France	Germany	Germany MAK	Greece	Hungary
Boric acid (H3BO3) 10043-35-3	-	TWA: 0.5 mg/m³	TWA: 10 mg/m³ Ceiling / Peak: 10 mg/m³	-	-
Borax (B4Na2O7.10H2O) 1303-96-4	TWA: 5 mg/m³	-	-	-	-
Sodium azide 26628-22-8	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ *	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³ Ceiling / Peak: 0.4 mg/m³	-	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³

Chemical name	Ireland	Italy	Italy REL	Latvia	Lithuania

Boric acid (H3BO3) 10043-35-3	TWA: 2 mg/m³ STEL: 6 mg/m³	-	-	TWA: 10 mg/m³	-
Borax (B4Na2O7.10H2O) 1303-96-4	TWA: 5 mg/m³ STEL: 6 mg/m³	-	-	-	-
Sodium azide 26628-22-8	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ Sk*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ pelle*	-	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ *	-

Chemical name	Luxembourg	Malta	Netherlands	Norway	Poland
Borax (B4Na2O7.10H2O) 1303-96-4	-	-	-	TWA: 5 mg/m³ STEL: 10 mg/m³	STEL: 2 mg/m³ TWA: 0.5 mg/m³
Sodium azide 26628-22-8	-	-	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ H*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³

Chemical name	Portugal	Romania	Slovakia	Slovenia	Spain
Boric acid (H3BO3) 10043-35-3	TWA: 2 mg/m³ STEL: 6 mg/m³	-	-	TWA: 0.5 mg/m³ STEL: STEL mg/m³	TWA: 2 mg/m³ STEL: 6 mg/m³
Borax (B4Na2O7.10H2O) 1303-96-4	TWA: 2 mg/m³ STEL: 6 mg/m³	-	-	-	TWA: 2 mg/m³ STEL: 6 mg/m³
Sodium azide 26628-22-8	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ Ceiling: 0.29 mg/m³ Ceiling: 0.11 ppm P*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ P*	TWA: 0.1 mg/m³ K*	TWA: 0.1 mg/m³ STEL: STEL mg/m³ K*	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ vía dérmica*

Chemical name	Sweden	Switzerland	United Kingdom
Boric acid (H3BO3) 10043-35-3	-	TWA: 1.8 mg/m³ STEL: 1.8 mg/m³	-
Borax (B4Na2O7.10H2O) 1303-96-4	-	TWA: 0.8 mg/m³ STEL: 0.8 mg/m³	TWA: 5 mg/m³ STEL: 15 mg/m³
Sodium azide 26628-22-8	-	TWA: 0.2 mg/m³ STEL: 0.4 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ Sk*

Biological occupational exposure limits
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Personal protective equipment

Eye/face protection No special protective equipment required.

Hand protection Wear suitable gloves.

Skin and body protection Wear suitable protective clothing.

Respiratory protection No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

General hygiene considerations Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product.

Environmental exposure controls No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Clear to semi-clear
Colour	Varies
Odour	No information available.
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Flash point	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
pH		None known
pH (as aqueous solution)	No data available	No information available
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Water solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Vapour pressure	No data available	None known
Relative density	No data available	None known
Bulk density	No data available	
Liquid Density	No data available	
Vapour density	No data available	None known
Particle characteristics		
Particle Size	No information available	
Particle Size Distribution	No information available	

9.2. Other information

9.2.1. Information with regard to physical hazard classes
Not applicable

9.2.2. Other safety characteristics
No information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials None known based on information supplied.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

Oral LD50 No information available
Dermal LD50 No information available
Inhalation LC50 No information available
Inhalation LC50 No information available
Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Boric acid (H3BO3)	= 2660 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 0.16 mg/L (Rat) 4 h
Borax (B4Na2O7.10H2O)	= 3493 mg/kg (Rat) = 2660 mg/kg (Rat)	> 10000 mg/kg (Rabbit)	> 2 mg/m³ (Rat) 4 h
Sodium azide	= 27 mg/kg (Rat)	= 20 mg/kg (Rabbit) = 50 mg/kg (Rat)	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Boric acid (H3BO3)	Repr. 1B
Borax (B4Na2O7.10H2O)	Repr. 1B

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Endocrine disrupting properties No information available.

11.2.2. Other information

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Boric acid (H3BO3)	-	LC50: =1020mg/L (72h, Carassius auratus)	-	EC50: 115 - 153mg/L (48h, Daphnia magna)
Sodium azide	-	LC50: =0.7mg/L (96h, Lepomis macrochirus) LC50: =0.8mg/L (96h, Oncorhynchus mykiss) LC50: =5.46mg/L (96h, Pimephales promelas)	-	-

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation

Component Information

Chemical name	Partition coefficient

Boric acid (H3BO3)	-0.757

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Boric acid (H3BO3)	The substance is not PBT / vPvB PBT assessment does not apply
Sodium azide	PBT assessment does not apply

12.6. Endocrine disrupting properties

Endocrine disrupting properties No information available.

12.7. Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

IATA

14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions None

IMDG

14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions None
14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable

14.6 Special Precautions for Users
Special Provisions None

ADR
14.1 UN number or ID number Not regulated
14.2 UN proper shipping name Not regulated
14.3 Transport hazard class(es) Not regulated
14.4 Packing group Not regulated
14.5 Environmental hazards Not applicable
14.6 Special Precautions for Users
Special Provisions None

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

Germany
Water hazard class (WGK) non-hazardous to water (nwg)

Netherlands

Chemical name	Netherlands - List of Carcinogens	Netherlands - List of Mutagens	Netherlands - List of Reproductive Toxins
Boric acid (H3BO3)	-	-	Fertility (Category 1B); Development (Category 1B)
Borax (B4Na2O7.10H2O)	-	-	Fertility (Category 1B); Development (Category 1B)

European Union
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work.

Authorizations and/or restrictions on use:
This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Boric acid (H3BO3) - 10043-35-3	30.	-
Borax (B4Na2O7.10H2O) - 1303-96-4	30.	-

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

International Inventories Contact supplier for inventory compliance status

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
EUH032 - Contact with acids liberates very toxic gas
H300 - Fatal if swallowed
H310 - Fatal in contact with skin
H360FD - May damage fertility. May damage the unborn child
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects

Legend
SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)

Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision Note	Significant changes throughout SDS. Review all sections
Revision date	27-Oct-2021

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006
Disclaimer
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.

End of Safety Data Sheet