



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
UK REACH Regulations (SI 2019/758 as amended)

Revision date 22-Jul-2022

Revision Number 1

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

### 1.1. Product identifier

**Product Name** PROTEIN PREPARATION - #20485

**Safety data sheet number** 20485

**Pure substance/mixture** Mixture

Contains Borax ( $B_4Na_2O_7 \cdot 10H_2O$ )

### 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

<b>Skin corrosion/irritation</b>	Category 1 - (H314)
<b>Serious eye damage/eye irritation</b>	Category 1 - (H318)
<b>Carcinogenicity</b>	Classification not possible
<b>Reproductive toxicity</b>	Category 1B - (H360FD)

### 2.2. Label elements

Contains Borax ( $B_4Na_2O_7 \cdot 10H_2O$ )



**Signal word**  
Danger

**Hazard statements**

H314 - Causes severe skin burns and eye damage  
H360FD - May damage fertility. May damage the unborn child

**Precautionary statements**

P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]  
P310 - Immediately call a POISON CENTER or doctor  
P280 - Wear protective gloves/protective clothing/eye protection/face protection

**2.3. Other hazards**

## SECTION 3: Composition/information on ingredients

**3.1 Substances**

Not applicable

**3.2 Mixtures**

Chemical name	Weight-%	EC No	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
Borax (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ·10H <sub>2</sub> O) 1303-96-4	10 - 20%	-	-	Repr. 1B (H360FD)	-	-	-

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

Chemical name	CAS No	SVHC candidates
Borax (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ·10H <sub>2</sub> O)	1303-96-4	X

## SECTION 4: First aid measures

**4.1. Description of first aid measures**

**General advice**

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

**Inhalation**

Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way

	valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical attention.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical attention.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical attention.
<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Wear personal protective clothing (see section 8).

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

<b>Symptoms</b>	Burning sensation.
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#### **4.3. Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure.
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### **SECTION 5: Firefighting measures**

#### **5.1. Extinguishing media**

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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**Large Fire** CAUTION: Use of water spray when fighting fire may be inefficient.

<b>Unsuitable extinguishing media</b>	Do not scatter spilled material with high pressure water streams.
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#### **5.2. Special hazards arising from the substance or mixture**

<b>Specific hazards arising from the chemical</b>	The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors.
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#### **5.3. Advice for firefighters**

<b>Special protective equipment and precautions for fire-fighters</b>	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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### **SECTION 6: Accidental release measures**

#### **6.1. Personal precautions, protective equipment and emergency procedures**

<b>Personal precautions</b>	Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
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<b>Other information</b>	Refer to protective measures listed in Sections 7 and 8.
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**For emergency responders** Use personal protection recommended in Section 8.

### **6.2. Environmental precautions**

**Environmental precautions** Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

### **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. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Remove contaminated clothing and shoes.

**General hygiene considerations** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing must not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

### **7.2. Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from moisture. Store locked up. Keep out of the reach of children. Store away from other materials. Store according to product and label instructions.

### **7.3. Specific end use(s)**

**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	United Kingdom
Borax (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ·10H <sub>2</sub> O) 1303-96-4	TWA: 5 mg/m <sup>3</sup> STEL: 15 mg/m <sup>3</sup>

**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

**Engineering controls** No information available.

### Personal protective equipment

**Eye/face protection** Tight sealing safety goggles. Face protection shield.

**Hand protection** Wear suitable gloves. Impervious gloves.

**Skin and body protection** Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

**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** Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing must not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**Physical state** Solid  
**Appearance** Powder  
**Colour** Varies  
**Odour** No information available.  
**Odour threshold** No information available

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

**Particle characteristics**

Particle Size	No information available
Particle Size Distribution	No information available

**9.2. Other information**

**SECTION 10: Stability and reactivity**

**10.1. Reactivity**

Reactivity	No information available.
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**10.2. Chemical stability**

Stability	Stable under normal conditions.
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**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.
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**10.4. Conditions to avoid**

Conditions to avoid	Exposure to air or moisture over prolonged periods.
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**10.5. Incompatible materials**

Incompatible materials	Acids. Bases. Oxidizing agent.
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**10.6. Hazardous decomposition products**

Hazardous decomposition products	None known based on information supplied.
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**SECTION 11: Toxicological information**

**11.1. Toxicological information**

**Information on likely routes of exposure**

**Product Information**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.
<b>Skin contact</b>	Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the

mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

#### Symptoms related to the physical, chemical and toxicological characteristics

**Symptoms** Redness. Burning. May cause blindness. Coughing and/ or wheezing.

#### Acute toxicity

#### Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 8,406.00 mg/kg  
 ATEmix (dermal) 2,546.90 mg/kg  
 ATEmix (inhalation-dust/mist) 7.05 mg/l

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
Borax (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ·10H <sub>2</sub> O)	= 3493 mg/kg ( Rat )	> 10000 mg/kg ( Rabbit )	> 2 mg/m <sup>3</sup> ( Rat ) 4 h

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

**Skin corrosion/irritation** Classification based on data available for ingredients. Causes severe skin burns and eye damage.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye damage. Causes burns.

**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	United Kingdom
Borax (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ·10H <sub>2</sub> O)	Repr. 1B

**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.

**Aspiration hazard** No information available.

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.

### 12.2. Persistence and degradability

Persistence and degradability No information available.

### 12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

### 12.4. Mobility in soil

Mobility in soil No information available.

### 12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

### 12.6. Endocrine disrupting properties

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	



<b>Special Provisions</b>	None
<b>14.7 Maritime transport in bulk according to IMO instruments</b>	No information available

**RID**

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

**ADR**

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

## SECTION 15: Regulatory information

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

#### National regulations

##### Authorizations and/or restrictions on use:

This product contains one or more substances subject to restriction (UK REACH - Annex XVII).

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorization per REACH Annex XIV
Borax (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ·10H <sub>2</sub> O) - 1303-96-4	Use restricted. See item 30. Restricted Reproductive Toxin 1B	-

#### Persistent Organic Pollutants

Not applicable

#### Export Notification requirements

Not applicable

#### Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

#### The Ozone-Depleting Substances Regulations 2015

Not applicable

#### The Biocidal Products Regulations 2001 (as amended)

Chemical name	The Biocidal Products Regulations 2001 (as amended)
Borax (B <sub>4</sub> Na <sub>2</sub> O <sub>7</sub> ·10H <sub>2</sub> O) - 1303-96-4	Product-type 8: Wood preservatives

#### The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

#### Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

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**

H360FD - May damage fertility. May damage the unborn child

**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
+	Sensitisers		

**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) (AELG(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)  
 Australia 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)  
 Organization for Economic Co-operation and Development Environment, Health, and Safety Publications  
 Organization for Economic Co-operation and Development High Production Volume Chemicals Program  
 Organization for Economic Co-operation and Development Screening Information Data Set  
 World Health Organization

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Revision date 22-Jul-2022

**Revision Note** Significant changes throughout SDS. Review all sections

**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)**  
**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**

**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**