ELISA kits: Safety Data Sheet (SDS)

1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND THE COMPANY / UNDERTAKING

1.1 Product identifier

PRODUCT NAME / CODE:	PFBV ELISA 2609BE00.FWD
Product description	**Kit consisting of following reagents:** • Reagent A: Sample Buffer • Reagent B: Conjugate • Reagent C: Substrate TMB (separate SDS available on request) • Antibody coated plate

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

Use of the product	Kit consisting of different reagents for educational purpose and research use.

1.3 Details of the supplier of the safety data sheet

Company	Steffens Biotechnische Analysen GmbH
Address	Gewerbestr. 7
Zip code / Place	79285 Ebringen (FRG)
Telephone	+49 (0)7664 600254
Internet	www.steffens-biotec.com
E-mail	info@steffens-biotec.com

1.4 Emergency telephone number

Emergency telephone no.	030 / 19240 Vergiftungszentrale Berlin http://www.vergiftungszentrale.de/vergz.html

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Product definition: Educational purpose and research use kit consisting of different reagents.

Classification according to the Directive 1999/45/EC (DPD)

Reagent A, B, C and the antibody coated plate: Not classified as dangerous.

Classification according to the Regulation (EC) No. 1272/2008 (CLP)

Reagent A, B, C and the antibody coated plate: Not classified as dangerous.

2.2 Label elements according to the Regulation (EC) No. 1272/2008 (CLP)

Reagent A, B, C and the antibody coated plate: No labeling required.

2.3 Special labelling of certain preparations

Reagent C: Safety data sheet available for professional user on request.

2.4 Other hazards

Other hazards which do not result in classification	None
Substance meets the criteria for PBT under Regulation EC No. 1907/2006, appendix XIII	PBT: No (refers to substances containing)
Substance meets the criteria for PBT under Regulation EC No. 1907/2006, appendix XIII	vPvB: No (refers to substances containing)

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Reagents containing following substances classified as dangerous

Reagent	Ingredient name	EC-number	CAS-number	REACH registr. number	Conc.	Classification 67/548/EEC	Classification Regulation (EC) No. 1272/2008 [CLP]
A: Sample buffer (10x-Conc.)	5-Bromo-5-nitro-1,3-dioxan	250-001-7	30007-47-7	--	<0,15% (w/v)	R34 S26; S28	Skin corr./irrit. 1B Eye dam./irrit. 1 Aquatic chronic 1
B: Conjugate	5-Bromo-5-nitro-1,3-dioxane	250-001-7	30007-47-7	--	<0,01% (w/v)	R34 S26; S28	Skin corr./irrit. 1B Eye dam./irrit. 1 Aquatic chronic 1
	2-Methyl-4-iso-thiazolin-3-one	220-239-6	2682-20-4	--	<0,01 (w/v)	T, C, N; R23/24/25, 34, 43 50/53	Acute Tox 2,H301 Acute Tox 2, H311 Skin Corr 1B, H314 Skin Sens.1, H317 Acute Tox 2, H331 Aquatic Chronic 1, H410
C: Substrate TMB	3,3',5,5'-Tetra-methylbenzidine	259-364-6	54827-17-7	--	<0,02% (w/w)	Xn; R22 N; R51-53	Acute Tox. 4; H302 Aquatic Chronic 2; H411
The antibody coated plate contains no dangerous substances. See section 16 for the full text of the classifications declared above. Occupational exposure limits are mentioned under section 8, if such exists.							

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	Not applicable
Skin contact	Remove contaminated clothing and footwear. Wash the skin properly with soap and water.
Eye contact	Keep eyelids well apart. Rinse with water for a couple of minutes. Call a physician if the complaints persist.
Ingestion	Wash mouth properly with water. If victim is conscious and alert, give 2-4 cupfuls of milk/water to dilute the substance in stomach. Call a physician if the complaints persist.

4.2 Most important potential symptoms and health effects, both acute and delayed

Inhalation	Not applicable
Skin contact	Not relevant
Eye contact	Not relevant
Ingestion	Not relevant

4.3 Indication of any immediate attention and special treatment needed

Ingestion	Not applicable
Specific treatments	Not applicable

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Dry chemical, foam, water spray or carbon dioxide
Unsuitable extinguishing media	Waterjet

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	None
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon monoxide, carbon dioxide and nitrous gases.

5.3 Advice for fire-fighters

Special protective actions 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.

Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves)conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
Further information	Not applicable

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action will be taken involving any personal rist or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. 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 Section 8 for additional information on hygiene measures.

6.2 Environmental precautions

Avoid dispersal of spilt 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).

6.3 Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move conainers from spill area. Dilute with water and mop up if water-soluble. Alternatively, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Not applicable

6.4 Reference to other sections

Reference to other sections	See Section 8 for information on appropriate personal protective equipment. See Section 13 for additional waste treatment information.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8).
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.

7.2 Conditions for safe storage, including any incompatibilities

Storage	Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10), food and drink. 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.
Further information	Not applicable

7.3 Specific end use(s)

Reagents for educational purpose and research use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits: not relevant

Recommended monitoring procedures	Not relevant

Derived effect levels

Product / ingredient name	Type	Exposure	Value	Population	Effects
--	--	--	--	--	--

Predicted effect concentrations	Not available
PNEC Summary	Not available

8.2 Exposure controls

Appropriate engineering controls	Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Otherwise, use local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the the lavatory and at the end of the working period.
Respiratory protection	Not relevant during normal condition.
Eye / face protection	Not relevant during normal condition.
Hand protection	Not relevant during normal condition.
Body protection	Not relevant during normal condition.

Environmental exposure controls	Not applicable

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties of the reagents

Property	Reagent A	Reagent B	Reagent C
Physical state	Liquid	Liquid	Liquid
Colour	Yellow	red	Colourless
Odour	Odourless	Odourless	Odourless
Odour threshold	n.a.	n.a.	n.a.
Solubility(ies)	Soluble in water	Soluble in water	Soluble in water
pH (product)	near neutral	near neutral	near neutral
Melting point / freezing point	n.d.	n.d.	n.d.
Initial boiling point and boiling range	n.d.	n.d.	n.d.
Flash point	> 100°C	> 100°C	> 100°C
Evaporation rate (butyl acetate = 1)	< 1	< 1	< 1
Flammability (solid, gas)	n.a.	n.a.	n.a.
Upper / lower flammability or explosive limits	Upper: n.a. Lower: n.a.	Upper: n.a. Lower: n.a.	Upper: n.a. Lower: n.a.
Combustion rate	n.a.	n.a.	n.a.
Vapour pressure (at 20°C)	n.d.	n.d.	n.d.
Vapour density	n.a.	n.a.	n.a.
Relative density (water = 1)	n.d.	n.d.	n.d.
Partition coefficient: n-octanol / water	n.a.	n.a.	n.a.
Autoignition temperature	n.d.	n.d.	n.d.
Decomposition temperature	n.d.	n.d.	n.d.
Viscosity	n.d.	n.d.	n.d.
Explosive properties	n.a.	n.a.	n.a.
Oxidizing properties	n.a.	n.a.	n.a.

n.a. = not applicable n.d. = not determined

9.2 Other information

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10. STABILITY AND REACTIVITY

10.1 Reactivity	Non-reactive

10.2 Chemical stability	Stabile under normal conditions of use and storage.

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

10.4 Conditions to avoid	Avoid direct sunlight.

10.5 Incompatible materials	None

10.6 Hazardous decomposition products	Carbon monoxide, carbon dioxide and nitrous gases

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

Assessment of acute toxicity for the different reagents:
Not harmful if inhaled. Not harmful in contact with skin. Not harmful if swallowed.

Calculated data:
LD50 oral, rat: > 2000 mg/kg
LD50 dermal, rat: > 2000 mg/kg

Irritation / Corrosion

Assessment of irritating effect for the different reagents:
Experimental / calculated data:
Corrosive or irritating to the skin, rabbit: Not irritating
Serious eye damage / eye irritation, rabbit: Not irritating

Sensitization by inhalation / skin contact

Assessment of sensibility for the different reagents:
May not cause any sensitizing effects.

Germ cell mutagenicity

Assessment of mutagenicity for the different reagents:
The chemical structure of the different reagents don't indicate any mutagenic effects.

Carcinogenicity

Assessment of carcinogenicity for the different reagents:
The chemical structure of the different reagents don't indicate any carcinogenic effects.

Reproduction toxicity

Assessment of reproduction toxicity for the different reagents:
The chemical structure of the different reagents don't indicate any reproduction toxic effects.

Developmental toxicity

Assessment of developmental toxicity for the different reagents:
The chemical structure of the different reagents don't indicate any teratogenic effects.

Specific target organ toxicity (single exposure)

STOT assessment single dose toxicity:
Based on available information, an organ specific toxicity is not expected for the different reagents.

Repeated dose toxicity and specific organ toxicity (repeated exposure)
Based on available information, an organ specific toxicity is not expected for the different reagents.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

12.1.1 Acute toxicity in the aquatic environment of 2-methyl-4-isothiazolin-3-one

Test	Value / unit (mg/L)	Test method	Exp. time (h)	Species
Daphnia EC50	0.18	--	48	Daphnia magna
BCF = 114. Log_{ow}: -0.486. Bioaccumulating effects are not expected. 48-54% degraded in 29 days OECD 301B. Not readily biodegradable.				

12.1.3 Acute toxicity in the aquatic environment of 5-bromo-5-nitro-1,3-dioxan

Test	Value / unit (mg/L)	Test method	Exp. time (h)	Species
Fish LC50	> 1 - 10	--	--	--
ECO50	> 1 - 10	--	--	Microorganisms
Assessment biodegradation and elimination (H_2O): The organic component of the product is biodegradable. Assessment bioaccumulation potential: No data available.				

12.1.4 Acute toxicity in the aquatic environment of 3,3',5,5'-tetramehylbenzidine (TMB)

Test	Value / unit (mg/L)	Test method	Exp. time (h)	Species
EC50	1 - 10 (EPI-suite model)	--	--	--
Persistence and degradability: TMB is predicted not to be easily biodegradable (EPI-suite model). Bioaccumulation potential: Log_{ow} = 4.11 - bioaccumulation is expected.				

12.1.5 Acute toxicity in the aquatic environment of all reagents (calculated)

Test	Value / unit (mg/L)	Test method	Exp. time (h)	Species
Fish LC50	> 100	--	96	--
Daphnia EC50	> 100	--	48	Daphnia magna
Algae IC50	> 100	--	72	Green algae

12.1.6 Ecotoxicity

The ragents contain low concentrations of the above mentioned substances. These concentrations are below the lowest concentration limit for classification as harmful to aquatic organisms.

12.2 Persistence and degradability

Conclusion / Summary	The reagents as such will be classified as readily biodegradable.

12.3 Bioaccumulative potential

Conclusion / Summary	The reagents as such will not be classified as bioaccumulative.

12.4 Mobility in soil

Soil / water partition coefficient (KOC)	Not available
Mobility	Not available

12.5 Results of PBT and vPvB assessment

PBT	Not applicable
vPvB	Not applicable

12.6. Summary - ecological information

Conclusion	The reagents contain substances classified as dangerous for the environment. But the concentrations of these substances are very low, so the reagents as such are not classified as dangerous for the environment, according to the EU classification rules in force. The antibody coated plate is not classified as dangerous for the environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Method of disposal	Consult the appropriate local waste disposal expert about waste disposal.

13.2. Remarks

Waste shall be separated into the categories that can be handled separately by the local and national waste management facilities. Please consider the relevant national or regional provisions.

14. TRANSPORT INFORMATION

Product classified as dangerous goods:

Yes	No	Not decided
☐	☒	☐

	ARD / RID	ADN / ADNR	IMDG	IATA
14.1 UN number	Not regulated	Not regulated	Not regulated	Not regulated
14.2 UN proper shipping name	--	--	--	--
14.3 Transport hazard class(es)	--	--	--	--
14.4 Packing Group	--	--	--	--
14.5 Environmental hazards	--	--	--	--
14.6 Special precautions for user	Not available	Not available	Not available	Not available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations / legislation specific for the substance or mixture
EU Regulation (EC) No. 1907/2006 (REACH)

REACH Status	In compliance. Pre-registration status: All components are listed or exempted.

Annex XIV - List of substances subject to authorization / Substances of very high concern
None of the components are listed. / not applicable

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Not applicable

15.2 Chemical Safety Assessment
not applicable

15.3. Other information

Tariff Code - harmonized system	Not applicable
The EU Seveso Directive	Not applicable

International regulations

Chemical Weapons Convention List Schedule I Chemicals	**Chemical Weapons Convention List Schedule II Chemicals**	**Chemical Weapons Convention List Schedule III Chemicals**
Not regulated	Not regulated	Not regulated

16. OTHER INFORMATION

Conforms to Regulation (EC) No. 1907 / 2006 (REACH), Annex II

Disclaimer: The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties, protections and disposal which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantibility for a particular purpose) is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material.

The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.

THE PRODUCER'S NOTES

LIST OF R-PHRASES MENTIONED UNDER SECTION 3

No.	R-Phrases
R22	Harmful if swallowed
R23 / 24 / 25	Toxic by inhalation / In contact with skin / If swallowed
R34	Causes burns.
R43	Causes severe burns.
R50	May cause sensitation by skin contact.
R51	Toxic to aquatic organisms.
R53	May cause long-term adverse effects in the aquatic environment

LIST OF HAZARD STATEMENTS MENTIONED UNDER SECTION 3

No.	H-Statements
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled
H410	Very toxic to aquatic life with long-lasting effects.
H411	Toxic to aquatic life with long lasting effects.
EUH032	Contact with acids liberates very toxic gas.

Version	Valid from (date)	Changes
1	2023-10-01	SDS according to regulation (EC) No. 1907 / 2006 (REACH), Annex II.