

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

1.1. Product identifier

Product form : Mixture
Trade name : Biorad Enzym Perfect

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

Use of the substance/mixture : Disinfectant

1.3. Details of the supplier of the safety data sheet

Necm Kimya Akaryakıt Ürünleri ve Medikal Malzemeler Sanayi ve Ticaret Limitet Şirketi
Battal Gazi Mah. Şark Cad. Aytop Gıda Sitesi I.Blok No:14
Sultanbeyli / İstanbul
T + 90 216 669 06 66 - F + 90 216 669 06 90/91
info@necmkimya.com.tr - www.necmkimya.com.tr

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Turkey	Ulusal Zehir Merkezi (UZEM) Refik Saydam Hıfızissihha Merkezi Başkanlığı	Cemal Gürsel Cd. No: 18 Sıhhiye Çankaya 06590 Ankara	114	Information is provided to public and medical personnel on poisoning incidents via 114.

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Acute toxicity (oral), Category 4 H302
Skin corrosion/irritation, Category 2 H315
Serious eye damage/eye irritation, Category 2 H319

Full text of H and EUH statements: see section 16

Adverse physicochemical, human health and environmental effects : Harmful if swallowed. Causes skin irritation. Causes serious eye irritation.

2.2. Label elements

Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Hazard pictograms (SEA) :



GHS07

Signal word (SEA) : Warning
Hazardous ingredients : Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides; ethanediol; ethylene glycol
Hazard statements (SEA) : H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
Precautionary statements (SEA) : P264 - Wash hands, forearms and face with soap and water thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 - IF SWALLOWED: If you feel unwell, immediately dial 114 for the NATIONAL POISON CENTER or call a doctor/physician.
P302+P352 - IF ON SKIN: Wash with plenty of water/...
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
EUH-statements (SEA) : EUH208 - Contains subtilisin(9014-01-1), amylase, α-(9000-90-2), Triacylglycerol lipase(9001-62-1). May produce an allergic reaction

2.3. Other hazards

Other hazards not contributing to the classification

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.
Aqua	(CAS-No.) 7732-18-5 (EC-No.) 231-791-2	50.9	Not classified
ethanediol; ethylene glycol	(CAS-No.) 107-21-1 (EC-No.) 203-473-3 (EC Index-No.) 603-027-00-1	32	Acute Tox. 4 (Oral), H302
Alcohols, C12-18(even numbered), ethoxylated < 2.5 EO	(CAS-No.) 68213-23-0 (EC-No.) 500-201-8	7	Aquatic Acute 1, H400 Aquatic Chronic 3, H412
Glycerol (glycerin, glycerine)	(CAS-No.) 56-81-5 (EC-No.) 200-289-5	3	Not classified
2,2',2''-nitrilotriethanol	(CAS-No.) 102-71-6 (EC-No.) 203-049-8	2.6	Not classified
Quaternary ammonium compounds, benzyl-C12-18-alkyldimethyl, chlorides	(CAS-No.) 68391-01-5 (EC-No.) 269-919-4	1.2	Acute Tox. 4 (Oral), H302 Skin Corr. 1, H314 Aquatic Acute 1, H400
boric acid substance listed as REACH Candidate	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2 (EC Index-No.) 005-007-00-2	1	Repr. 1B, H360FD
2-phenoxyethanol	(CAS-No.) 122-99-6 (EC-No.) 204-589-7 (EC Index-No.) 603-098-00-9	0.5	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319
subtilisin	(CAS-No.) 9014-01-1 (EC-No.) 232-752-2 (EC Index-No.) 647-012-00-8	0.33	STOT SE 3, H335 Skin Irrit. 2, H315 Eye Dam. 1, H318 Resp. Sens. 1, H334
amylase, α-	(CAS-No.) 9000-90-2 (EC-No.) 232-565-6 (EC Index-No.) 647-015-00-4	0.33	Resp. Sens. 1, H334
Triacylglycerol lipase	(CAS-No.) 9001-62-1 (EC-No.) 232-619-9	0.33	Resp. Sens. 1, H334
Mannanase	(CAS-No.) - (EC-No.) -	0.33	Not classified
Cellulase	(CAS-No.) - (EC-No.) -	0.33	Not classified
Octadecan-1-ol, ethoxylated, < 2.5 EO	(CAS-No.) 9005-00-9 (EC-No.) 500-017-8	≤ 0.1	Eye Dam. 1, H318 Aquatic Acute 1, H400 Aquatic Chronic 2, H411
Isotridecanol, ethoxylated	(CAS-No.) 9043-30-5 (EC-No.) 500-027-2	≤ 0.1	Acute Tox. 4 (Oral), H302 Eye Dam. 1, H318

Specific concentration limits:

Name	Product identifier	Specific concentration limits
boric acid	(CAS-No.) 10043-35-3 (EC-No.) 233-139-2 (EC Index-No.) 005-007-00-2	(5.5 ≤ C ≤ 100) Repr. 1B, H360FD

Full text of H and EUH statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Call a poison center or a doctor if you feel unwell.
First-aid measures after inhalation	: If experiencing respiratory symptoms: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after skin contact : Irritation.
Symptoms/effects after eye contact : Eye irritation.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition products in case of fire : Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. Avoid contact with skin and eyes.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.
Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment.
Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Hand protection : Protective gloves
Eye protection : Safety glasses
Skin and body protection : Wear suitable protective clothing
Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment
Environmental exposure controls : Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear
Colour	: Colourless
Odour	: Characteristic
pH	: 6.5 – 7.5
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: 0.89 – 0.95
Relative density	: No data available
Solubility	: Soluble in water.

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Harmful if swallowed.
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

ATE (SEA) (oral)	1506.024 mg/kg bodyweight
------------------	---------------------------

Alcohols, C12-18(even numbered), ethoxylated < 2.5 EO (68213-23-0)	
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 1.6 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Glycerol (glycerin, glycerine) (56-81-5)	
LD50 oral rat	27 mg/kg bodyweight Animal: rat, Animal sex: female

2,2',2''-nitritotriethanol (102-71-6)	
LD50 oral rat	6400 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)

Skin corrosion/irritation	: Causes skin irritation. pH: 6.5 – 7.5
---------------------------	--

Serious eye damage/irritation	: Causes serious eye irritation. pH: 6.5 – 7.5
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

2,2',2''-nitrilotriethanol (102-71-6)

NOAEL (chronic, oral, animal/male, 2 years)	63 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 451 (Carcinogenicity Studies), Remarks on results: other:
---	--

Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified

subtilisin (9014-01-1)

STOT-single exposure	May cause respiratory irritation.
----------------------	-----------------------------------

STOT-repeated exposure	: Not classified
------------------------	------------------

Alcohols, C12-18(even numbered), ethoxylated < 2.5 EO (68213-23-0)

NOAEL (oral, rat, 90 days)	≥ 500 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
----------------------------	---

2,2',2''-nitrilotriethanol (102-71-6)

NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
----------------------------	--

Triacylglycerol lipase (9001-62-1)

NOAEL (oral, rat, 90 days)	≥ 1080.2 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
----------------------------	--

Aspiration hazard	: Not classified
-------------------	------------------

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

Alcohols, C12-18(even numbered), ethoxylated < 2.5 EO (68213-23-0)

LC50 - Fish [1]	1.2 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
LC50 - Fish [2]	0.876 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	2.7 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.41 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	0.19 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

Glycerol (glycerin, glycerine) (56-81-5)

LC50 - Fish [1]	54000 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
-----------------	---

2,2',2''-nitrilotriethanol (102-71-6)

LC50 - Fish [1]	11800 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	609.88 mg/l Test organisms (species): Ceriodaphnia dubia
EC50 72h - Algae [1]	512 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	216 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

Triacylglycerol lipase (9001-62-1)

LC50 - Fish [1]	> 402 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
LC50 - Fish [2]	> 68.3 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 235 mg/l Test organisms (species): Daphnia magna
EC50 - Crustacea [2]	> 37.4 mg/l Test organisms (species): Daphnia magna

12.2. Persistence and degradability

No additional information available

Biorad Enzym Perfect

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Version: 1.0 Issue date: 28.07.2021

12.3. Bioaccumulative potential

Biorad Enzym Perfect	
Bioaccumulative potential	No additional information available

12.4. Mobility in soil

Biorad Enzym Perfect	
Mobility in soil	No additional information available

12.5. Results of PBT and vPvB assessment

Component	
boric acid (10043-35-3)	This substance/mixture does not meet the PBT criteria according to the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014 This substance/mixture does not meet the vPvB criteria according to the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

12.6. Other adverse effects

Ozone	: Not classified
Other adverse effects	: No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	: Disposal must be done according to official regulations. Waste Management Regulation published in the Official Journal numbered 29314 on April 2, 2015.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not regulated for transport				
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6. Special precautions for user

- Overland transport

No data available

- Transport by sea

No data available

- Air transport

No data available

- Inland waterway transport

No data available

- Rail transport

No data available

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. National regulations

Local regulations (Turkey)

- : Regulation on Transportation of Dangerous Goods by Road published in the Official Journal numbered 28801 on October 24, 2013
- Personal Protective Equipment Regulation published in the Official Journal numbered 30761 on May 1, 2019
- Regulation on Use of Personal Protective Equipments in Workplaces published in the Official Journal numbered 28695 on July 2, 2013
- Occupational Health and Safety Regulation published in the Official Journal numbered 25311 on December 9, 2003
- Regulation on Test Methods that will be Applied to Determine the Physicochemical, Toxicological and Ecotoxicological Properties of Substances and Mixtures published in the Official Journal numbered 28848 on December 11, 2013
- Regulation on Health and Safety Precautions When Working with Chemical Substances published in the Official Journal numbered 28733 on August 12, 2013
- Regulation on Health and Safety Precautions When Working with Carcinogenic and Mutagenic Substances published in the Official Journal numbered 28730 on August 6, 2013.

This product doesn't contain any substances that is controlled or prohibited for use according to the Regulation on Ozone Depleting Substances published in the Official Journal numbered 30031 on April 7, 2017.

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified
vPvB	Very Persistent and Very Bioaccumulative

Biorad Enzym Perfect

Safety Data Sheet

In accordance with the Regulation on Safety Data Sheets Regarding Hazardous Substances and Mixtures published in the Official Journal numbered 29204 on December 13, 2014

Version: 1.0 Issue date: 28.07.2021

Data sources

: ECHA (European Chemicals Agency). Classification according to Classification, Labelling and Packaging of Substances and Mixtures (SEA) Regulation published in the Official Journal numbered 28848 on December 11, 2013.

Full text of H- and EUH-statements

Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 3	Hazardous to the aquatic environment — Chronic Hazard, Category 3
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Repr. 1B	Reproductive toxicity, Category 1B
Resp. Sens. 1	Respiratory sensitisation, Category 1
Skin Corr. 1	Skin corrosion/irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.
H400	Very toxic to aquatic life.
H412	Harmful to aquatic life with long lasting effects.
EUH208	Contains subtilisin(9014-01-1), amylase, α -(9000-90-2), Triacylglycerol lipase(9001-62-1). May produce an allergic reaction

Safety Data Sheet author's

Name	İrem BEKTAŞ KART
Certificate number	KDU-A-0-0045
Certificate valid until	30/04/2024
Contact information	irem@bekkdanismanlik.com

Safety Data Sheet (SDS), Turkey

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.