

# Safety Data Sheet

## SDS acc. Hazard Communication Standard

REF: 740941

Protein Solving Buffer Set PSB/TCEP

Page: 1/10

Printing Date: 04.04.2023

Date of Issue: 02.08.2022

Version: 2.2.3.2

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

#### 1.1 Product Identifier / Product Name

REF 740941  
Product Name Protein Solving Buffer Set PSB/TCEP

1 x 7,5 mL PSB  
1 x 107 mg TCEP

UFI: SUNV-235D-8202-429N

#### 1.2 Relevant identified Uses of the Substance or Mixture and Uses advised against

##### Relevant identified uses

Product for analytical use.

Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0

The exposure scenario is integrated into sections 1-16.

##### Uses advised against

not described

#### 1.3 Details of the Supplier and of the Safety Data Sheet

##### Manufactured by:

MACHEREY-NAGEL GmbH & Co. KG  
Valenciener Str. 11, 52355 Düren, Germany  
Phone: +49 2421 969 0

E-mail: [sds@mn-net.com](mailto:sds@mn-net.com) ([msds@mn-net.com](mailto:msds@mn-net.com))

#### 1.4 Emergency Telephone Number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.

USA: American Association Of Poison Control Centers

Rockville, MD 20857. tel. 1-800-222-1222, <<https://www.poisonhelp.org>>

DE: Gemeinsames Giftinformationszentrum (GGIZ)

99089 Erfurt tel. +49 361 730 730

<<https://www.ggiz-erfurt.de>>

You find our current versions of SDS in Internet:

<<http://www.mn-net.com/SDS>>

### SECTION 2: Hazard(s) Identification

#### 2.0 Classification of the complete Product



GHS07

Signal Word WARNING

Hazard Identification	Hazard Classes/Categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2

#### 2.1 Classification of the substance or mixture

7,5 mL PSB

Signal Word Do not need labelling as hazardous  
-

No Hazard Class

107 mg TCEP



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GHS07

Signal Word

WARNING

**Hazard Identification**

**Hazard Classes/Categories**

H315

Skin Irrit. 2

H319

Eye Irrit. 2

List of H phrases: see section 16.2

### 2.2 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

According the implementation of GHS immediate packages only must be labelled with product identifier(s), GHS symbol(s), signal word, manufacturer name and phone number (OSHA's interpretation of HCS 2012). Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2) / **until 100 mL** (Canada WHMIS 2015). This labelling exemption does not apply to U.S.A.

**7,5 mL PSB**

Do not need labelling as hazardous

Signal Word: -

**107 mg TCEP**



GHS07

Signal Word: WARNING

### Label elements of the complete product



GHS07

Signal Word: WARNING

### 2.3 Other Hazards

**Possible Hazards from physicochemical Properties**

In the case of pH values are less than 5 or higher than 9 then it is irritant.

**Information pertaining to particular Risks to Human and possible Symptoms**

**Information pertaining to particular Risks to the Environment**

**Possible endocrine disrupting effects**

data not available

## SECTION 3: Composition/Information on Ingredients

### 3.1 Substances or 3.2 Mixtures

**107 mg TCEP**

Substance name: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(+HCl)*  
 CAS No.: 51805-45-9

Substance rating: H315, Skin Irrit. 2, H319, Eye Irrit. 2

Chemical Formula: C<sub>9</sub>H<sub>16</sub>ClO<sub>6</sub>P

Synonyms (de): TCEP·HCl

Concentration: 70 - <100 %

acc. GHS: H315, Skin Irrit. 2, H319, Eye Irrit. 2



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Substance name: *inorganic salts, declaration not necessary*  
 CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.  
 Synonyms (de): kein Gefahrstoff  
 Concentration: 25 - <50 %  
 acc. GHS: The criteria for classification are not fulfilled.

### 7,5 mL PSB

Substance name: *indicator dye(s)*  
 CAS No.: -

Substance rating: No criteria for classification or naming of chemical is not required.  
 Concentration: 0,01 - <0,1 %  
 acc. GHS: The criteria for classification are not fulfilled.

Substance name: *glycerole*  
 CAS No.: 56-81-5

Substance rating: No criteria for classification or naming of chemical is not required.  
 Chemical Formula: C<sub>3</sub>H<sub>8</sub>O<sub>3</sub>  
 Synonyms (de): 1,2,3-Propantriol  
 REACH Reg. No.: 01-2119471987-18-xxxx  
 EC No.: 200-289-5  
 Concentration: 10 - <50 %  
 acc. GHS: The criteria for classification are not fulfilled.

Indice No.: n/a

Substance name: *dodecyl sulfate, sodium salt*  
 CAS No.: 151-21-3

Substance rating: H228, Flam. Sol. 1, H302, Acute Tox. 4 oral, H315, Skin Irrit. 2, H318, Eye Dam. 1, H332, Acute Tox. 4 inh., H335, STOT SE 3, H412, Aquatic Chronic 3  
 Chemical Formula: C<sub>12</sub>H<sub>25</sub>NaO<sub>4</sub>S  
 Synonyms (de): Natriumlaurylsulfat  
 REACH Reg. No.: 01-2119489461-32-xxxx  
 EC No.: 205-788-1  
 Concentration: 1 - <2,5 %  
 acc. GHS: The criteria for classification are not fulfilled.

### 3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%. List of Hazard and Precaution phrases: see section 16.2.

## SECTION 4: First-Aid Measures

### 4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice.

#### 4.1.1 After SKIN Contact

Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water.

#### 4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open with eye washing bottle, eye douche or running water (protect intact eye).

#### 4.1.3 After INHALATION of Vapors

#### 4.1.4 After ORAL Intake

After oral intake lots of water should be drunk after it has been ingested.

### 4.2 Most important Symptoms and Effects, both acute and delayed



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### 4.3 Indication of any immediate Medical Attention and Special Treatment needed

No additionally recommendations. ---

## SECTION 5: Fire-Fighting Measures

### 5.1 Extinguishable Media

#### 5.1.1 Suitable extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used. Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

#### 5.1.2 Unsuitable extinguishing media

data not available

### 5.2 Special Hazards arising from the Substance or Mixture

### 5.3 Advice for Firefighters

No, for listed product. Product package burns like paper or plastic.

### 5.4 Additional Information

## SECTION 6: Accidental Release Measures

### 6.1 Personal Precautions, Protective Equipment and Emergency Procedure

Regular staff training is necessary.

### 6.2 Environmental Precautions

not necessary

### 6.3 Methods and Material for Containment and Cleaning up

### 6.4 Reference to other Sections

## SECTION 7: Handling and Storage

### 7.1 Precautions for Safe Handling

### 7.2 Conditions for Safe Storage, including any Incompatibilities

The original product package allows a safe storage. Storage class (German chemical industry): see chapter 12.1

Storage class (VC1): 10

Water hazard class (DE): 2

#### 7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage.

### 7.3 Specific End Use(s)

Product for analytical use.

## SECTION 8: Exposure Controls/Personal Protection

### 8.1 Control Parameters

#### 107 mg TCEP

Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)*

CAS No.: 51805-45-9

Chemical: *inorganic salts, declaration not necessary*

CAS No.: -



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**7,5 mL PSB**

Chemical: <i>indicator dye(s)</i>	CAS No.: -
Chemical: <i>glycerole</i>	CAS No.: 56-81-5
DNEL: [inh] 56 mg/m <sup>3</sup> DNEL = Derived No-Effect Level (for workers)	
PNEC (fresh water): 0.885 mg/L PNEC = Predicted No Effect Concentration	
Chemical: <i>dodecyl sulfate, sodium salt</i>	CAS No.: 151-21-3
NIOSH: not listed	
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period	
OSHA: not listed	

### 8.2 Exposure Controls

The highest level of cleanliness must be maintained at the workplace.

**8.2.1 Respiratory Protection**

No additional recommendations.

**8.2.2 Skin protection / Hand protection**

Yes, gloves (permeation time >30 min - level 2), consist of PVC.

**8.2.3 Eye / Face Protection**

Yes, Splash Goggles.

**8.2.4 Skin Protection**

Not necessary.

**8.2.5 Hygiene Measures**

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

**8.2.6 Thermal hazards**

data not available

### 8.3 Limitation and monitoring of environmental exposure

Do not release product into environment.

## SECTION 9: Physical and Chemical Properties

### 9.1 Information on Basic Physical and Chemical Properties

**107 mg TCEP**

a) State of aggregation:	solid (lyophilized)
b) Color:	colorless
c) Odor:	penetrative
d) Melting Point:	data not available
e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w):	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	data not available
q) Relative Vapor Density (air=1):	data not available
r) Particle Size:	data not available

**7,5 mL PSB**

a) State of aggregation:	liquid
b) Color:	green
c) Odor:	odorless
d) Melting Point:	data not available



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e) Boiling Point:	data not available
f) Flammability:	data not available
g) Explosive Limits (lower / upper):	data not available
h) Flash Point:	data not available
i) Autoignition Temperature:	data not available
j) Decomposition Temperature:	data not available
k) pH Value:	6.5-7
l) Kinematic Viscosity:	data not available
m) Soluble in Water:	data not available
n) Partition Coefficient (o/w) :	data not available
o) Vapor Pressure (68°F):	data not available
p) Specific Gravity:	1.06 g/cm <sup>3</sup>
q) Relative Vapor Density (air=1) :	data not available
r) Particle Size:	data not available

### 9.2 Further Information

Properties relevant to substance groups

## SECTION 10: Stability and Reactivity

### 10.1 Reactivity

No further data available.

### 10.2 Chemical Stability

no known instability.

### 10.3 Possibility of Hazardous Reactions

No further data available.

### 10.4 Conditions to avoid

### 10.5 Incompatible Materials

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### 10.6 Hazardous Decomposition Products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

## SECTION 11: Toxicological Information

### 11.1 Information on Toxicological Effects

Following information is valid for pure chemicals. Quantitative data on the toxicity of this product are not available.

#### 107 mg TCEP

Chemical:	<i>tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(+HCl)</i>	CAS No.: 51805-45-9
TSCA Inventory:	LVE	
LD50 orl rat :	3500 mg/kg	
LD50 scu rat :	> 3000 mg/kg	

Chemical:	<i>inorganic salts, declaration not necessary</i>	CAS No.: -
TSCA Inventory:	all listed	

#### 7,5 mL PSB

Chemical:	<i>indicator dye(s)</i>	CAS No.: -
TSCA Inventory:	all listed, <1%	

Chemical:	<i>glycerole</i>	CAS No.: 56-81-5
TSCA Inventory:	listed (1,2,3-Propanetriol)	
Exposure Routes:	inhalation, skin and/or eye contact	
Target Organs:	Eyes, skin, respiratory system, kidneys	
Symptoms:	irritation eyes, skin, respiratory system; headache, nausea, vomiting; kidney injury	



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LD50 orl rat :	12600 mg/kg	
Chemical:	<i>dodecyl sulfate, sodium salt</i>	CAS No.: 151-21-3
TSCA Inventory:	listed	California Prop. 65 List: not listed
Canada CEPA 1999:	DSL yes	
LD50 orl rat :	1288 mg/kg	
LC50 inh rat :	3,900 mg/L/1H	

### 11.2 Other Hazards

**Possible endocrine disrupting effects**

data not available

**Other Information**

no additional data available

## SECTION 12: Ecological Information

### 12.1 Toxicity

Following information is valid for pure chemicals.

**107 mg TCEP**

Chemical: *tris-(2-carboxyethyl)phosphine hydrochloride, TCEP(•HCl)* CAS No.: 51805-45-9

Chemical: *inorganic salts, declaration not necessary* CAS No.: -

**7,5 mL PSB**

Chemical: *indicator dye(s)* CAS No.: -

Chemical: *glycerole* CAS No.: 56-81-5

PNEC (fresh water) : 0.885 mg/L

PNEC = Predicted No Effect Concentration

LC50 fish/96h : >5000 24h mg/L

EC50 daphnia/48h : >10 24h g/L

IC50 scenedesmus quadricauda/72h : IC5 7d >10 g/L

EC10 pseudomonas putida/16h : EC5: >10 g/L

Partition Coefficient (o/w) : -1,76

Chemical: *dodecyl sulfate, sodium salt* CAS No.: 151-21-3

LC50 daphnia magna/48h : 6.3 mg/L

LC50 fish/96h : 1.31-22.5 mg/L

Partition Coefficient (o/w) : 1,6

### 12.2 Persistence and Degradability

not necessary

### 12.3 Bioaccumulative Potential

not necessary

### 12.4 Mobility in Soil

not necessary

### 12.5 Results of PBT and vPvB Assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher

### 12.6 Endocrine disrupting properties

data not available

### 12.7 Other Adverse Effects

no additional data available



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### SECTION 13: Disposal Considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (RCRA Code D002/D003, EU waste code number 16 05 06).

#### 13.1 Waste Treatment Methods

### SECTION 14: Transport Information

14.1 - 14.4: No dangerous goods according the Transport regulations

#### 14.5 Environmental Hazards

none

#### 14.6 Special Precautions for User

not necessary

#### 14.7 Carriage of bulk cargo by sea in accordance with IMO instruments

Not applicable.

### SECTION 15: Regulatory Information

#### 15.1 Safety, Health and Environmental Regulations/Legislation specific for the Substance or Mixture

##### U.S. Federal Regulations

OSHA "A Guide to The Globally Harmonized System of Classification and Labelling of Chemicals (GHS)"

<https://www.osha.gov/dsg/hazcom/ghs.html>

29 CFR 1910.1200 Hazard communication.

NIOSH Pocket Guide to Chemical Hazards

NIOSH Workplace Safety & Health Topics

TSCA Inventory

##### U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

##### Canada

Canada CEPA 1999 - Domestic Substances List (DSL), List of Toxic Substances (Schedule 1)

#### 15.2 Chemical Safety Assessment

not necessary for these small amounts

### SECTION 16: Other Information

#### 16.1 Changes compared to the last version

Between versions 2.2.3.2 and 2.2.2.2 following changes were applied: - 1 composition data corrected

#### 16.2 List of Hazard and Precaution Phrases

##### 16.2.1 List of relevant H Phrases

H315 Causes skin irritation.

H319 Causes serious eye irritation.

##### 16.2.2 List of relevant P Phrases

#### 16.3 Recommended Restriction on Use

Only for Professional User.

An individual package of this product or test kit has a moderate hazardous potential.

#### 16.4 Sources of Key Data

KÜHN, BIRETT, Leaflets on hazardous materials, 2021

Directive 1999/92/EG Minimum requirements to improve the safety and health protection of workers at risk from potentially explosive atmospheres

SUVA .CH, limit values in the air at work 2009, revised on 01/2009

Regulation 790/2009/EU, adaptation of Regulation 1272/2008/EU to technical and scientific progress (1st ATP)

Regulation 453/2010/EU, adaptation of the REACH regulation 1907/2006/EG

Regulation 487/2013/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (4th ATP)

Regulation 1221/2015/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (7th ATP)

Regulation 776/2017/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (10th ATP)

Regulation 669/2018/EU, adaptation of Regulation 1272/2008/EC to technical and scientific progressText (11th ATP)



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Regulation 1480/2018/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (13th ATP)  
 Regulation 521/2019/EU, adaptation of regulation 1272/2008/EG to technical and scientific progress (12th ATP)  
 TRGS 900, German rules of technology on limit values in the air at work, as of 03/2019  
 Regulation 217/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (14th ATP)  
 Regulation 878/2020/EU, adaptation of Annex II of the REACH regulation 1907/2006/EG  
 Regulation 1182/2020/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (15th ATP)  
 Regulation 643/2021/EU, adaptation of Annex VI, Part 1, of Regulation 1272/2008/EC to technical and scientific progress (16th ATP)  
 Regulation 849/2021/EU, adaptation of Annex VI, Part 3, of Regulation 1272/2008/EC to technical and scientific progress (17th ATP)

**revisions/updates**

*Reason for revision:* 2014-02 Corrected structure of the sections according to Regulation 453/2010/EU, if necessary  
 2014-04 adjustment according Regulation 487/2013/EU  
 2016-03 adjustment according Regulation 1221/2015/EU  
  
 2017-11 adjustment according the ECHA registration dossier  
 2022-11 adjustment according Regulation 878/2020/EU

### 16.5 Further Information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.

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### 16.6 Legend / Abbreviations

acc:	according
ADR:	Convention concerning the International Carriage of Dangerous Goods by Road
Act:	acute
BAT:	biological workplace tolerance value
CAO:	Cargo Aircraft Only
Carc:	carcinogen
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging regulation
CMR:	carcinogen, mutagen, reproduction toxic
Corr:	corrosive
COD:	chemical oxigen demand
CSCL:	Chemical Substance Control Law (Jp)
Dam:	damage
DNEL:	Derived No-Effect Level (for workers)
derm:	dermal
dog:	dog
EC10:	Concentration causing a toxic effect in 10% of the test organisms
EC:	European Community
EC-Nr:	Substance number of the EC substance inventory
EmS:	Guide to accident management measures on ships
EU:	European Union
fish:	fish (not specified)
GHS:	Global Harmonized System of Classification and Labeling of Chemicals
gpg:	guinea pig
ICAO:	International Civil Aviation Organization
ihl:	inhaled
IMDG:	International Maritime Dangerous Goods Code
intrav:	intravenous
ipt:	intraperitoneal
ISHL:	Industrial Safety and Health Law (Jp)
LC50:	letale concentration 50%
LD50:	letale dosis 50%
leuciscus idus:	fisch, ide, orfe
MAK:	maximum workplace concentration
Met:	Metall
mus:	mouse
Muta:	mutagen
NIOSH:	National Institute for Occupational Safety and Health (US)
NRD:	Non-rapidly degradable
onchorhynchus mykiss:	fish, rainbow trout



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- orl: oral
- OSHA: Occupational Safety and Health Administration
- PAX: transport on passenger planes allowed
- PBT: persistent, bioaccumulating, toxic substance
- pH: pH value
- pimephales promelas: fish, fathead minnow
- PNEC: Predicted No Effect Concentration
- PROC 15: Process category 'for laboratory use'
- PRTR: Law for PRTR and Promotion of Chemical Management (Jp)
- PVC: polyvinyl chloride
- quail: bird, quail
- rat: rat
- rbt: rabbit
- RD: rapidly degradable
- RE: repeated
- REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
- REF: item number, reference number
- Reg.No.: rRegistration number
- Repr: harmful to reproduction
- Resp: respiratory
- scu: sub cutan
- RIP: REACH Implementations Projects
- SDS: safety data sheet
- Sens: sensitisation
- STEL: short term exposure limit
- STOT: Specific Target Organ Toxicity
- SVHC: Substance of Very High Concern
- t/a: tons per year
- TCCA: Toxic Chemicals Control Act (S. Korea)
- Tox: toxic
- TSCA: The Toxic Substances Control Act (US)
- TWA: time weighted average
- TRGS: technical regulations (DE)
- vPvB: very persistent, very bioaccumulating substance

### 16.7 Training Advice

Regular safety training. Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.



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