

Safety Data Sheet

SDS acc. Hazard Communication Standard

REF: 934111

Photometer PF-3 Pool

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Printing Date: 01.10.2019

Date of Issue: 21.06.2018

Section 1: Identification

1.1 Product Identifier / Product Name

REF	934111
Product Name	Photometer PF-3 Pool
-	1 x Calibration tube (5 mL)
	3 x Alkaline Manganese Batteries Type AA
	1 x Button cell CR2032, built-in
	1 x 20 mL Cl ₂ -2
	1 x 28 g Cl ₂ -1

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

Relevant identified uses
 Product for Analytical Use.
 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
 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY
 Tel.: +49 2421 969 0

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1.4 Emergency Telephone Number

Information not necessary.

You find our current versions of SDS (22 languages) in Internet:

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

Section 2: Hazard(s) Identification

2.0 Classification of the complete Product

-

2.1 Classification of the Substance(s) or Mixture(s)

Calibration tube (5 mL)

Signal Word	Do not need labelling as hazardous
No Hazard Class	-

Alkaline Manganese Batteries Type AA

Signal Word	Do not need labelling as hazardous
No Hazard Class	-

Button cell CR2032, built-in

Signal Word	Do not need labelling as hazardous
No Hazard Class	-

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20 mL Cl₂ -2

Signal Word

Do not need labelling as hazardous

-

No Hazard Class

28 g Cl₂ -1

Signal Word

Do not need labelling as hazardous

-

No Hazard Class

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

Calibration tube (5 mL)

Do not need labelling as hazardous

Signal Word: -

Alkaline Manganese Batteries Type AA

Do not need labelling as hazardous

Signal Word: -

Button cell CR2032, built-in

Do not need labelling as hazardous

Signal Word: -

20 mL Cl₂ -2

Do not need labelling as hazardous

Signal Word: -

28 g Cl₂ -1

Do not need labelling as hazardous

Signal Word: -

2.3 Other Hazards

Possible Hazards from physicochemical Properties

According to our current status of knowledge and experience we state, that this product does not contain any substances, which - in accordance with GHS directives and EC regulations 1272/2008/EC, 1907/2006/EC for Hazardous goods - have to be declared as dangerous goods, either because of their applied concentration or because of their total amount in anyone kit.

An individual package has considerably less hazardous potential. ---

Information pertaining to particular Risks to Human and possible Symptoms

Information pertaining to particular Risks to the Environment

Other Hazards

This SDS contains information on shipping and transport safety. ---

Section 3: Composition/Information on Ingredients

3.1 Substances or 3.2 Mixtures

Calibration tube (5 mL)

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Chemical: *water* CAS No.: 7732-18-5
 Classification: No criteria for classification or naming of chemical is not required.
 Chemical Formula: H₂O
 TSCA Inventory: listed
 RTECS: ZC0110000
 EC No.: 231-791-2
 Weight Percent: 90 - <100 %
 acc. GHS: The criteria for classification are not fulfilled.

Alkaline Manganese Batteries Type AA

Chemical: *alkaline manganese battery* CAS No.: -
 Classification: No criteria for classification or naming of chemical is not required.
 Weight Percent: 99 - <100 %
 acc. GHS: The criteria for classification are not fulfilled.

Button cell CR2032, built-in

Chemical: *Button cell on circuit board (lithium metal battery)* CAS No.: -
 Classification: No criteria for classification or naming of chemical is not required.
 Weight Percent: 99 - <100 %
 acc. GHS: The criteria for classification are not fulfilled.

20 mL Cl₂ -2

Chemical: *potassium iodide* CAS No.: 7681-11-0
 Classification: H319, Eye Irrit. 2
 Chemical Formula: KI
 TSCA Inventory: listed
 RTECS: TT29750000 MFCD: 00011405
 EC No.: 231-659-4
 Weight Percent: 1 - <10 %
 acc. GHS: The criteria for classification are not fulfilled.

28 g Cl₂ -1

Chemical: *boric acid* CAS No.: 10043-35-3
 Classification: H360FD, Repr. 1B
 Chemical Formula: H₃BO₃
 TSCA Inventory: listed
 RTECS: ED4550000 MFCD: 00011337
 EC No.: 233-139-2 Indice No.: 005-007-00-2
 Weight Percent: 0,5 - <5,5 % Correlation Factor: x 0.17 (= %B)
 acc. GHS: The criteria for classification are not fulfilled.

Chemical: *tri-sodium citrate* CAS No.: 6132-04-3
 Classification: No criteria for classification or naming of chemical is not required.
 Chemical Formula: C₆H₅Na₃O₇•2H₂O
 TSCA Inventory: listed (CAS 68-04-2)
 RTECS: GE8300000
 EC No.: 200-675-3
 Weight Percent: 40 - <60 %
 acc. GHS: The criteria for classification are not fulfilled.

Chemical: *N,N-Diethyl-1,4-phenylene diammonium sulfate* CAS No.: 6283-63-2
 Classification: H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm.
 Chemical Formula: C₁₀H₁₆N₂•H₂O
 Synonyms: N,N-diethylbenzene-1,4-diammonium sulfate
 TSCA Inventory: listed (CAS 6065-27-6)
 RTECS: SS9625000 MFCD: 00012993
 EC No.: 228-500-6 Indice No.: 612-080-00-X
 Weight Percent: 1 - <5 %
 acc. GHS: The criteria for classification are not fulfilled.



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Chemical:	<i>potassium dihydrogen phosphate</i>	CAS No.:	7778-77-0
Classification:	No criteria for classification or naming of chemical is not required.		
Chemical Formula:	KH_2PO_4		
TSCA Inventory:	listed		
RTECS:	TC6615500	MFCID:	00011401
EC No.:	231-913-4		
Weight Percent:	5 - <25 %		
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%.

Section 4: First-Aid Measures

4.1 Description of First-Aid Measures

Place insured person out of danger zone to fresh air immediately.

4.1.1 After SKIN Contact

Not necessary.

4.1.2 After EYE Contact

Not necessary.

4.1.3 After INHALATION of Vapors

Not necessary.

4.1.4 After ORAL Intake

Not necessary.

4.2 Most important Symptoms and Effects, both acute and delayed

4.3 Indication of any immediate Medical Attention and Special Treatment needed

No additionally recommendations. ---

Section 5: Fire-Fighting Measures

5.1 Extinguishable 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 WATER FOG, WATER SPRAY, alcohol-resistant FOAM, DRY CHEMICAL, CARBON DIOXIDE can be used.

5.2 Special Hazards arising from the Substance or Mixture

None.

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

Not necessary.

6.2 Environmental Precautions

not necessary

6.3 Methods and Material for Containment and Cleaning up

Clean working area with water. Flush used water into sewer.

6.4 Reference to other Sections

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Section 7: Handling and Storage

7.1 Precautions for Safe Handling

Handling in accordance with the test instruction, that comes with the product.

7.2 Conditions for Safe Storage, including any Incompatibilities

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (VCI): 6.1D
Water hazard class (DE): 3

7.2.1 Conditions for Safe Storage, including any Incompatibilities

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

Calibration tube (5 mL)

Chemical: *water*

CAS No.: 7732-18-5

Alkaline Manganese Batteries Type AA

Chemical: *alkaline manganese battery*

CAS No.: -

Button cell CR2032, built-in

Chemical: *Button cell on circuit board (lithium metal battery)*

CAS No.: -

20 mL Cl₂ -2

Chemical: *potassium iodide*

CAS No.: 7681-11-0

28 g Cl₂ -1

Chemical: *boric acid*

CAS No.: 10043-35-3

DNEL: [derm] 392 mg/kg bw/day; [inh] 8.3 mg/m³

DNEL = Derived No-Effect Level (for workers)

PNEC_(fresh water): 2.9 mg/L

PNEC = Predicted No Effect Concentration

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

Chemical: *tri-sodium citrate*

CAS No.: 6132-04-3

Chemical: *N,N-Diethyl-1,4-phenylene diammonium sulfate*

CAS No.: 6283-63-2

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

Chemical: *potassium dihydrogen phosphate*

CAS No.: 7778-77-0

8.2 Exposure Controls

Not necessary.

8.2.1 Respiratory Protection

Not necessary.

8.2.2 Hand Protection

Not necessary.

8.2.3 Eye/Face Protection

Not necessary.

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- 8.2.4 **Skin Protection**
Not necessary.
- 8.2.5 **Hygiene Measures**
Information not necessary.

Section 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Calibration tube (5 mL)

- | | | |
|--|------------------------|-------------------|
| a) Appearance: liquid | Color: colorless | b) Odor: odorless |
| c) Odor Threshold: | data not available | |
| d) pH: | 6-8 | |
| e) Melting Point: | data not available | |
| f) Boiling Point: | data not available | |
| g) Flash Point: | data not available | |
| h) Evaporation Rate _(ether=1) : | data not available | |
| i) Flammability (solid, gas): | data not available | |
| j) Explosive Limits: | data not available | |
| k) Vapor Pressure (68°F): | data not available | |
| l) Vapor Density _(air=1) : | data not available | |
| m) Specific Gravity: | 1,00 g/cm ³ | |
| n) Soluble in Water: | data not available | |
| o) Partition Coefficient (o-w): | data not available | |
| p) Autoignition Temperature: | data not available | |
| q) Decomposition temperature: | data not available | |
| r) Viscosity: | data not available | |
| s) Explosive properties: | data not available | |
| t) Oxidizing properties: | --- | |

Alkaline Manganese Batteries Type AA

- | | | |
|--|--------------------|-------------------|
| a) Appearance: solid | Color: black | b) Odor: odorless |
| c) Odor Threshold: | data not available | |
| d) pH: | data not available | |
| e) Melting Point: | data not available | |
| f) Boiling Point: | data not available | |
| g) Flash Point: | data not available | |
| h) Evaporation Rate _(ether=1) : | data not available | |
| i) Flammability (solid, gas): | data not available | |
| j) Explosive Limits: | data not available | |
| k) Vapor Pressure (68°F): | data not available | |
| l) Vapor Density _(air=1) : | data not available | |
| m) Specific Gravity: | data not available | |
| n) Soluble in Water: | data not available | |
| o) Partition Coefficient (o-w): | data not available | |
| p) Autoignition Temperature: | data not available | |
| q) Decomposition temperature: | data not available | |
| r) Viscosity: | data not available | |
| s) Explosive properties: | data not available | |
| t) Oxidizing properties: | --- | |

Button cell CR2032, built-in

- | | | |
|--|---|-------------------|
| a) Appearance: solid | Color: colored | b) Odor: odorless |
| c) Odor Threshold: | data not available | |
| d) pH: | data not available | |
| e) Melting Point: | data not available | |
| f) Boiling Point: | data not available | |
| g) Flash Point: | data not available | |
| h) Evaporation Rate _(ether=1) : | data not available | |
| i) Flammability (solid, gas): | Do not transport damaged batteries. Special instruction necessary | |
| j) Explosive Limits: | data not available | |
| k) Vapor Pressure (68°F): | data not available | |
| l) Vapor Density _(air=1) : | data not available | |
| m) Specific Gravity: | data not available | |
| n) Soluble in Water: | data not available | |
| o) Partition Coefficient (o-w): | data not available | |
| p) Autoignition Temperature: | data not available | |

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- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

20 mL Cl₂ -2

- a) Appearance: liquid Color: colorless b) Odor: alcoholic
- c) Odor Threshold: data not available
- d) pH: 9
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: 24 °C
- h) Evaporation Rate_(ether=1): data not available
- i) Flammability (solid, gas): data not available
- j) Explosive Limits: data not available
- k) Vapor Pressure (68°F): data not available
- l) Vapor Density_(air=1): data not available
- m) Specific Gravity: 0,93 g/cm³
- n) Soluble in Water: 0-100 %
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

28 g Cl₂ -1

- a) Appearance: powder (solid) Color: colorless b) Odor: odorless
- c) Odor Threshold: data not available
- d) pH: 6
- e) Melting Point: data not available
- f) Boiling Point: data not available
- g) Flash Point: data not available
- h) Evaporation Rate_(ether=1): data not available
- i) Flammability (solid, gas): data not available
- j) Explosive Limits: data not available
- k) Vapor Pressure (68°F): data not available
- l) Vapor Density_(air=1): data not available
- m) Specific Gravity: data not available
- n) Soluble in Water: 0-100 %
- o) Partition Coefficient (o-w): data not available
- p) Autoignition Temperature: data not available
- q) Decomposition temperature: data not available
- r) Viscosity: data not available
- s) Explosive properties: data not available
- t) Oxidizing properties: ---

9.2 Other Information

Relevant Properties of Substance Group

Section 10: Stability and Reactivity

10.1 Reactivity

None

10.2 Chemical Stability

No known instability.

10.3 Possibility of Hazardous Reactions

None.

10.4 Conditions to avoid

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Not known. ---

10.5 Incompatible Materials

Not necessary. ---

10.6 Hazardous Decomposition Products

In the original package all parts/all reagents are safety and separated stored - protected against short circuits. 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.

Calibration tube (5 mL)

Chemical: *water*

CAS No.: 7732-18-5

TSCA Inventory: listed

Alkaline Manganese Batteries Type AA

Chemical: *alkaline manganese battery*

CAS No.: -

Button cell CR2032, built-in

Chemical: *Button cell on circuit board (lithium metal battery)*

CAS No.: -

20 mL Cl₂ -2

Chemical: *potassium iodide*

CAS No.: 7681-11-0

TSCA Inventory: listed

LD₅₀orl rat : 2779 mg/kg

28 g Cl₂ -1

Chemical: *boric acid*

CAS No.: 10043-35-3

TSCA Inventory: listed

California Prop. 65 List: not listed

Canada CEPA 1999: DSL yes

LD₅₀orl rat : >3765 mg/kgLC₅₀ihl rat : > 2 mg/m³LD₅₀drm rat : >2000 mg/kgEU carcinogen: R_D 1B, R_F 1BChemical: *tri-sodium citrate*

CAS No.: 6132-04-3

TSCA Inventory: listed (CAS 68-04-2)

LD₅₀orl rat : >8000 mg/kgChemical: *N,N-Diethyl-1,4-phenylene diammonium sulfate*

CAS No.: 6283-63-2

TSCA Inventory: listed (CAS 6065-27-6) California Prop. 65 List: not listed

Canada CEPA 1999: not listed

LD₅₀orl rat : 497 mg/kgChemical: *potassium dihydrogen phosphate*

CAS No.: 7778-77-0

TSCA Inventory: listed

LD₅₀orl rat : 4640 mg/kgLD₅₀drm rbt : >4640 mg/kg

Section 12: Ecological Information

12.1 Toxicity

Following information is valid for pure chemicals.

Calibration tube (5 mL)

Chemical: *water*

CAS No.: 7732-18-5

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Alkaline Manganese Batteries Type AA		
Chemical:	<i>alkaline manganese battery</i>	CAS No.: -
Button cell CR2032, built-in		
Chemical:	<i>Button cell on circuit board (lithium metal battery)</i>	CAS No.: -
20 mL Cl₂ -2		
Chemical:	<i>potassium iodide</i>	CAS No.: 7681-11-0
LC50 _{fish/96h} :	2190 mg/L	
Partition Coefficient (o-w):	0.04	
28 g Cl₂ -1		
Chemical:	<i>boric acid</i>	CAS No.: 10043-35-3
PNEC(fresh water) :	2.9 mg/L	
PNEC = Predicted No Effect Concentration		
LC50 _{fish/96h} :	[4d] 79.7 mg/L	
EC50 _{daphnia/48h} :	91-165 mg/L	
IC50 _{scenedesmus quadricauda/72h} :	[72h] 52.4 mg/L	
EC10 _{pseudomonas putita/16h} :	[EC10] 10 mg/L	
Partition Coefficient (o-w):	-1.09	
Chemical:	<i>tri-sodium citrate</i>	CAS No.: 6132-04-3
LC50 _{fish/96h} :	18-32 g/L	
EC50 _{daphnia/48h} :	5.6-10 g/L	
EC50 _{chlorella vulgaris/5d} :	>18-32 g/L	
EC10 _{pseudomonas putita/16h} :	EC50 _{ps. fluorescens/8h} : >1.8-3.2 g/L	
Chemical:	<i>N,N-Diethyl-1,4-phenylene diammonium sulfate</i>	CAS No.: 6283-63-2
Chemical:	<i>potassium dihydrogen phosphate</i>	CAS No.: 7778-77-0
LC50 _{leuciscus idus/96h} :	90048h mg/L	

- 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**
no data available
- 12.6 Other Adverse Effects**
no additional data available

Section 13: Disposal Considerations

Batteries must be collected separately and disposed acc. law regulations (electronic waste, f. ex. in EU WEEE). Further: Not necessary.

- 13.1 Waste Treatment Methods**
GENERAL: Empty solids into municipal waste, empty liquids diluted into drains. Normally it is possible to empty small amounts (diluted!) into drains.

Section 14: Transport Information

14.1 - 14.4: No dangerous goods according the Transport regulations
Lithium metal batteries in equipment, not restricted, PI 970: Section II (button cell), No entry in AWB necessary

- 14.5 Environmental Hazards**
none
- 14.6 Special Precautions for User**



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not necessary

14.7 Transport in Bulk according to Annex II of MARPOL and the IBC Code

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.

MN Leaflet/User manual, also see www.mn-net.com

15.2 Chemical Safety Assessment

Section 16: Other Information

16.1 List of Hazard and Precaution Phrases

16.1.1 List of relevant H Phrases

16.1.2 List of relevant P Phrases

16.2 Training Advice

Regular safety training.

16.3 Recommended Restriction on Use

None

16.4 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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16.5 Sources of Key Data

GHS: EU Regulation 1272/2008/EC on Classification, Labelling and Packaging of Substances and Mixtures, amending and repealing EU Directives 67/548/EEC and 1999/45/EC, and amending EU Regulation 1907/2006/EC

SDS: EU Regulation 453/2010/EU REACH - Requirements for the Compilation of Safety Data Sheets

KÜHN, BIRETT (German), Data Sheets of Hazardous Substances

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of European Regulation 1221/2015/EU

You find our current Versions of SDS in Internet:

<http://www.mn-net.com/SDS> [U.S. English]