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# according to 1907/2006/EC, Article 31

Printing date 21.04.2021

Revision: 21.04.2021

SECTION 1: Identification of the substance/mixture and of the comp	any/undertaking
· 1.1 Product identifier	
<ul> <li>Trade name: <u>AFT Multi Element Solution</u></li> <li>Article number: N8145061</li> <li>1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.</li> </ul>	
• Application of the substance / the mixture Laboratory chemicals	
• 1.3 Details of the supplier of the safety data sheet • Manufacturer/Supplier:	
PerkinElmer, Inc.	
710 Bridgeport Avenue	
Shelton, Connecticut 06484 USA	
CustomerCareUS@perkinelmer.com	
203-925-4600 PerkinElmer, Inc.	
Chalfont Road Buckinghamshire	
Seer Green HP9 2FX	
cc.uk@perkinelmer.com	
United Kingdom	
P: 0800 896 046	
F: 0800-89 17 14	
PerkinElmer, Inc.	
Llantrisant Business Park, Unit A	
Llantrisant CF72 8YW	
United Kingdom cc.uk@perkinelmer.com	
P: 44 1443 234005	
1.4 Emergency telephone number:	
CHEMTREC (within US) 800-424-9300	
CHEMTREC (from outside US) +1 703-527-3887 (call collect)	
CHEMTREC (within AU) +(61)-290372994	
SECTION 2: Hazards identification	
2.1 Classification of the substance or mixture Classification according to Regulation (EC) No 1272/2008	
GHS07	
Skin Irrit. 2 H315 Causes skin irritation.	
Eye Irrit. 2 H319 Causes serious eye irritation.	
2.2 Label elements	
organic more in annung	(Contd. on page 2
• <i>Label elements</i> • <i>Labelling according to Regulation (EC) No 1272/2008</i> The product is classified and labelled according to the CLP regulation. • <i>Hazard pictograms</i> GHS07 • <i>Signal word</i> Warning	(Cantil an maga
	(Conta: on page 2



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· Hazard stateme	ents
H315 Causes sk	cin irritation.
H319 Causes se	prious eye irritation.
Precautionary s	statements
P264	Wash thoroughly after handling.
P280	Wear protective gloves / eye protection / face protection.
P305+P351+P	338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P337+P313	If eye irritation persists: Get medical advice/attention.
2.3 Other hazar	
	pes not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or
Results of PBT	and vPvB assessment
• <b>PBT:</b> Not appli	cable.

· vPvB: Not applicable.

# SECTION 3: Composition/information on ingredients

· 3.2 Chemical characterisation: Mixtures

• Description: Mixture of substances listed below with nonhazardous additions.

CAS: 7697-37-2 EINECS: 231-714-2	Nitric Acid	Ox. Liq. 2, H272 Skin Corr. 1A, H314
Additional Compone	nts	
CAS: 7732-18-5 EINECS: 231-791-2	Water	97.9816%
CAS: 7439-92-1 EINECS: 231-100-4	lead 🗞 Repr. 1A, H360FD-H362	0.002%
	rubidium Water-react. 1, H260 Skin Corr. 1B, H314	0.002%
CAS: 7440-24-6 EINECS: 231-133-4	strontium 🚸 Water-react. 1, H260	0.002%
	uranium Acute Tox. 2, H300; Acute Tox. 2, H330 STOT RE 2, H373 Aquatic Chronic 4, H413	0.002%
CAS: 7440-62-2 EINECS: 231-171-1	vanadium	0.002%
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CAS: 7440-66-6	zinc	$\frac{\text{(Contd. of page})}{0.002\%}$
EINECS: 231-175-3	2000 Pyr. Sol. 1, H250; Water-react. 1, H260	
	<i>Aquatic Acute 1, H400; Aquatic Chronic 1, H410</i>	
CAS: 7782-49-2	selenium	0.002%
EINECS: 231-957-4	<ul> <li>Acute Tox. 3, H301; Acute Tox. 3, H331</li> <li>STOT RE 2, H373</li> <li>Aquatic Chronic 4, H413</li> </ul>	
CAS: 7429-90-5 EINECS: 231-072-3	aluminium	0.00029
CAS: 7439-89-6 EINECS: 231-096-4	iron Solution Acute Tox. 2, H300	0.00029
CAS: 7439-93-2 EINECS: 231-102-5	lithium Water-react. 1, H260 Skin Corr. 1B, H314	0.00029
CAS: 7439-95-4 EINECS: 231-104-6	magnesium Ø Pyr. Sol. 1, H250; Water-react. 1, H260	0.00029
CAS: 7439-96-5 EINECS: 231-105-1	manganese	0.00029
CAS: 7440-02-0 EINECS: 231-111-4	nickel Carc. 2, H351; STOT RE 1, H372 Skin Sens. 1, H317	0.00029
CAS: 7440-09-7 EINECS: 231-119-8	potassium Water-react. 1, H260 Skin Corr. 1B, H314	0.00029
CAS: 7440-22-4 EINECS: 231-131-3	silver	0.00029
CAS: 7440-23-5 EINECS: 231-132-9	sodium Water-react. 1, H260 Skin Corr. 1B, H314	0.00029
CAS: 7440-28-0 EINECS: 231-138-1	thallium Acute Tox. 2, H300; Acute Tox. 2, H330 STOT RE 2, H373 Aquatic Chronic 4, H413	0.00029
CAS: 7440-38-2 EINECS: 231-148-6	Arsenic Arsenic Acute Tox. 3, H301; Acute Tox. 3, H331 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.00029
CAS: 7440-39-3 EINECS: 231-149-1	barium Water-react. 2, H261	0.00029
CAS: 7440-41-7 EINECS: 231-150-7	<ul> <li>beryllium</li> <li>Acute Tox. 3, H301; Acute Tox. 2, H330</li> <li>Carc. 1B, H350i; STOT RE 1, H372</li> <li>Skin Irrit. 2, H315; Eye Irrit. 2, H319; Skin Sens. 1, H317; STOT SE 3, H335</li> </ul>	0.00029
CAS: 7440-43-9 EINECS: 231-152-8	cadmium Acute Tox. 3, H301; Acute Tox. 2, H330 Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361fd; STOT RE 1, H372 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.00029



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		0.0002%
EINECS: 231-158-0 Skin S Aquatic C CAS: 7440-50-8 copper	Cens. 1, H317	
EINECS. 251-159-0		0.0002%
CAS: 7440-55-3 gallium EINECS: 231-163-8		0.0002%
CAS: 7440-69-9 bismuth EINECS: 231-177-4		0.0002%
CAS: 7440-70-2 calcium EINECS: 231-179-5 🐼 Water	-react. 2, H261	0.0002%
CAS: 7440-74-6 Indium EINECS: 231-180-0		0.0002%
CAS: 14644-55-4 cesium vo EINECS: 238-693-9	inadium trioxide	0.0002%

## **SECTION 4: First aid measures**

· 4.1 Description of first aid measures

- · General information: Immediately remove any clothing soiled by the product.
- After inhalation: In case of unconsciousness place patient stably in side position for transportation.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact:
- Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- · After swallowing: If symptoms persist consult doctor.
- 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.
- · 4.3 Indication of any immediate medical attention and special treatment needed
- *No further relevant information available.*

# **SECTION 5: Firefighting measures**

- · 5.1 Extinguishing media
- Suitable extinguishing agents: Use fire extinguishing methods suitable to surrounding conditions.
- 5.2 Special hazards arising from the substance or mixture No further relevant information available.
- · 5.3 Advice for firefighters
- · Protective equipment: No special measures required.

## **SECTION 6:** Accidental release measures

• 6.1 Personal precautions, protective equipment and emergency procedures Not required.

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• 6.2 Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system. Dilute with plenty of water.

Do not allow to enter sewers/ surface or ground water.

• 6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

- · 6.4 Reference to other sections
- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

# SECTION 7: Handling and storage

• 7.1 Precautions for safe handling No special precautions are necessary if used correctly. • Information about fire - and explosion protection: No special measures required.

· 7.2 Conditions for safe storage, including any incompatibilities

· Storage:

- Requirements to be met by storerooms and receptacles: No special requirements.
- Information about storage in one common storage facility: Not required.
- · Further information about storage conditions: Keep container tightly sealed.

• 7.3 Specific end use(s) No further relevant information available.

# SECTION 8: Exposure controls/personal protection

· 8.1 Control parameters

• Additional information about design of technical facilities: No further data; see item 7.

· Ingredients with limit values that require monitoring at the workplace:

7697-37-2 Nitric Acid

WEL Short-term value: 2.6 mg/m<sup>3</sup>, 1 ppm

• Additional information: The lists valid during the making were used as basis.

- · 8.2 Exposure controls
- · Personal protective equipment:
- · General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Immediately remove all soiled and contaminated clothing

Wash hands before breaks and at the end of work.

- Avoid contact with the eyes and skin.
- **Respiratory protection:** Not required.
- Protection of hands:



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

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• *Material of gloves* The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- **Penetration time of glove material** The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be
- The exact break trough time has to be jound out by the manufacturer of the protective gloves and has to be observed.
- Eye protection:



Tightly sealed goggles

# SECTION 9: Physical and chemical properties

# • 9.1 Information on basic physical and chemical properties • General Information

· Appearance:		
Form:	Fluid	
Colour:	According to product specification	
· Odour:	Characteristic	
· Odour threshold:	Not determined.	
· pH-value:	Not determined.	
· Change in condition		
Melting point/freezing point:	$0 \ ^{\circ}C$	
Initial boiling point and boiling rang	ge: Undetermined.	
Flash point:	Not applicable.	
· Flammability (solid, gas):	Not applicable.	
Decomposition temperature:	Not determined.	
Auto-ignition temperature:	Product is not selfigniting.	
Explosive properties:	Product does not present an explosion hazard. Not determined.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapour pressure at 20 °C:	23 hPa	
Density:	Not determined.	
Relative density	Not determined.	
· Vapour density	Not determined.	
• Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
water:	Fully miscible.	
		(Contd. on page

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· Partition coefficient: n-octanol/water:	Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Water:	98.0 %	
• 9.2 Other information	No further relevant information available.	

# SECTION 10: Stability and reactivity

· 10.1 Reactivity No further relevant information available.

- 10.2 Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · 10.3 Possibility of hazardous reactions No dangerous reactions known.
- · 10.4 Conditions to avoid No further relevant information available.
- 10.5 Incompatible materials: No further relevant information available.
- · 10.6 Hazardous decomposition products: No dangerous decomposition products known.

# **SECTION 11: Toxicological information**

· 11.1 Information on toxicological effects

• Acute toxicity Based on available data, the classification criteria are not met.

• Primary irritant effect:

· Skin corrosion/irritation

Causes skin irritation.

- · Serious eye damage/irritation
- Causes serious eye irritation.
- Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
- Additional toxicological information:
- · CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)
- Germ cell mutagenicity Based on available data, the classification criteria are not met.
- · Carcinogenicity Based on available data, the classification criteria are not met.
- *Reproductive toxicity Based on available data, the classification criteria are not met.*
- STOT-single exposure Based on available data, the classification criteria are not met.
- STOT-repeated exposure Based on available data, the classification criteria are not met.
- Aspiration hazard Based on available data, the classification criteria are not met.

## **SECTION 12: Ecological information**

· 12.1 Toxicity

- · Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability No further relevant information available.
- 12.3 Bioaccumulative potential No further relevant information available.
- 12.4 Mobility in soil No further relevant information available.

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Printing date 21.04.2021 Revision: 21.04.2021 Trade name: AFT Multi Element Solution (Contd. of page 7) • Additional ecological information: · General notes: Not hazardous for water. · 12.5 Results of PBT and vPvB assessment · **PBT:** Not applicable. · vPvB: Not applicable. · 12.6 Other adverse effects No further relevant information available. **SECTION 13: Disposal considerations** · 13.1 Waste treatment methods · Recommendation Must not be disposed together with household garbage. Do not allow product to reach sewage system. • Uncleaned packaging: · Recommendation: Disposal must be made according to official regulations. · Recommended cleansing agents: Water, if necessary together with cleansing agents. **SECTION 14: Transport information** · 14.1 UN-Number · ADR, IMDG, IATA UN3264 · 14.2 UN proper shipping name 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S.  $\cdot ADR$ (nitric acid) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric · IMDG, IATA acid) · 14.3 Transport hazard class(es) ·ADR · Class 8 (C1) Corrosive substances. · Label 8 · IMDG, IATA · Class 8 Corrosive substances. · Label 8 · 14.4 Packing group · ADR, IMDG, IATA Ш

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14.5 Environmental hazards:	
Marine pollutant:	No
14.6 Special precautions for user	Warning: Corrosive substances.
Hazard identification number (Kemler code):	80
EMS Number:	F-A,S-B
Segregation groups	Acids
Stowage Category	A
Stowage Code	SW2 Clear of living quarters.
14.7 Transport in bulk according to Annex II o	of
Marpol and the IBC Code	Not applicable.
Transport/Additional information:	
ADR	
Limited quantities (LQ)	5L
Excepted quantities $(\widetilde{E}Q)$	Code: El
· · · · · · · · · · · · · · · · · · ·	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
Transport category	3
Tunnel restriction code	Ε
IMDG	
Limited quantities (LQ)	5L
Excepted quantities $(\widetilde{E}Q)$	Code: El
· · · ·	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
UN ''Model Regulation'':	UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC
0	N.O.S. (NITRIC ACID), 8, III

# **SECTION 15: Regulatory information**

· 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture			
CAS: 7732-18-5 EINECS: 231-791-2	Water		97.9816%
CAS: 7697-37-2 EINECS: 231-714-2	Nitric Acid	<ul> <li>𝔅 Ox. Liq. 2, H272</li> <li>𝔅 Skin Corr. 1A, H314</li> </ul>	2.0%
CAS: 7439-92-1 EINECS: 231-100-4	lead	🚸 Repr. 1A, H360FD-H362	0.002%

· Directive 2012/18/EU

• Named dangerous substances - ANNEX I None of the ingredients is listed.

· REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

· DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II

None of the ingredients is listed.

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#### · National regulations:

• Information about limitation of use:

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

- · Waterhazard class: Generally not hazardous for water.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

### **SECTION 16: Other information**

#### Disclaimer

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer Life and Analytical Sciences shall not be held liable for any damage resulting from handling or from contact with the product.

#### · Relevant phrases

- H250 Catches fire spontaneously if exposed to air.
- H260 In contact with water releases flammable gases which may ignite spontaneously.
- H261 In contact with water releases flammable gases.
- H272 May intensify fire; oxidiser.
- H300 Fatal if swallowed.
- H301 Toxic if swallowed.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H331 Toxic if inhaled.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H335 May cause respiratory irritation.
- H341 Suspected of causing genetic defects.
- H350 May cause cancer.
- H350i May cause cancer by inhalation.
- H351 Suspected of causing cancer.
- H360FD May damage fertility. May damage the unborn child.
- H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.
- H362 May cause harm to breast-fed children.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H400 Very toxic to aquatic life.
- *H410 Very toxic to aquatic life with long lasting effects.*
- H413 May cause long lasting harmful effects to aquatic life.

### · Department issuing SDS:

Environmental, Health and Safety PerkinElmer Chalfont Road



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(Contd. of page 10) **Buckinghamshire** Seer Green HP9 2FX United Kingdom Telephone : 0800-89 60 46 FAX: 0800-89 17 14 · Contact: Within the USA: 1-(800)-762-4000 Outside the USA: 1-(203)-712-8488 · Abbreviations and acronyms RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail) ICAO: International Civil Aviation Organisation ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road) IMDG: International Maritime Code for Dangerous Goods IATA: International Air Transport Association GHS: Globally Harmonised System of Classification and Labelling of Chemicals EINECS: European Inventory of Existing Commercial Chemical Substances ELINCS: European List of Notified Chemical Substances CAS: Chemical Abstracts Service (division of the American Chemical Society) PBT: Persistent, Bioaccumulative and Toxic vPvB: very Persistent and very Bioaccumulative Ox. Liq. 2: Oxidizing liquids – Category 2 Skin Corr. 1A: Skin corrosion/irritation - Category 1A Skin Irrit. 2: Skin corrosion/irritation – Category 2 Eye Irrit. 2: Serious eye damage/eye irritation - Category 2 \* \* Data compared to the previous version altered.