

Printing date 09/19/2022 Review date 09/19/2022

1 Identification

- · Product identifier
- · Trade name: STD AFT MULTI-ELEMENT H/HE
- · Article number N8151038
- · Application of the substance / the mixture Laboratory chemicals
- 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

· Emergency telephone number:

CHEMTREC (within US) 800-424-9300

CHEMTREC (from outside US) +1 703-527-3887 (call collect)

CHEMTREC (within AU) +(61)-290372994

2 Hazard(s) identification

· Classification of the substance or mixture



Skin Irrititation 2 H315 Causes skin irritation.

Eye Irritation 2A H319 Causes serious eye irritation.

- · Label elements
- · GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
- · Hazard pictograms GHS07
- · Signal word Warning
- · Hazard statements

H315 Causes skin irritation.

H319 Causes serious eye irritation.

· Precautionary statements

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

P302+P352 If on skin: Wash with plenty of water. P321 Specific treatment (see on this label).

P305+P351+P338 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.

- · Classification system:
- · NFPA ratings (scale 0 4)



Health = 2 Fire = 0Reactivity = 0

(Contd. on page 2)



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

· HMIS-ratings (scale 0 - 4)

(Contd. of page 1)



Health = 2Fire = 0

· Other hazards

The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.

- · Results of PBT and vPvB assessment
- · **PBT**: Not applicable.
- · vPvB: Not applicable.

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			,			

- · Chemical characterization: Mixtures
- · Description: Mixture of the substances listed below with nonhazardous additions.

7697-37-2	nitric acid	2.0%
Additional	Components	·
7732-18-5	Water	97.9971%
7429-90-5	aluminium	0.0001%
7439-89-6	ron	0.0001%
7439-92-1	'ead	0.0001%
7439-93-2	ithium	0.0001%
7439-95-4	nagnesium	0.0001%
7439-96-5	nanganese	0.0001%
7440-02-0	nickel	0.0001%
7440-09-7	ootassium	0.0001%
7440-17-7	rubidium	0.0001%
7440-22-4	silver	0.0001%
7440-23-5	sodium	0.0001%
7440-24-6	strontium	0.0001%
7440-28-0	hallium	0.0001%
7440-38-2	Arsenic	0.0001%
7440-39-3	barium	0.0001%
7440-41-7	beryllium	0.0001%
7440-43-9	cadmium	0.0001%
7440-46-2	Cesium nitrate	0.0001%
7440-47-3	chromium	0.0001%
7440-48-4	cobalt	0.0001%
7440-50-8	copper	0.0001%
7440-55-3	zallium	0.0001%



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

		(Contd. of page 2)
7440-61-1	uranium	0.0001%
7440-62-2	vanadium	0.0001%
7440-66-6	zinc	0.0001%
7440-69-9	bismuth	0.0001%
7440-70-2	calcium	0.0001%
7440-74-6	Indium	0.0001%
7782-49-2	selenium	0.0001%

4 First-aid measures

- · 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.
- · Most important symptoms and effects, both acute and delayed No further relevant information available.
- Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

- · Extinguishing media
- · Suitable extinguishing agents: Use fire fighting measures that suit the environment.
- · Special hazards arising from the substance or mixture No further relevant information available.
- · Advice for firefighters
- · **Protective equipment:** No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- Environmental precautions: Dilute with plenty of water.
- · Methods and material for containment and cleaning up:

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

· 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.

· Protective Action Criteria for Chemicals

· PAC-1:		
7439-89-6	iron	3.2 mg/m^3
7439-92-1	lead	0.15 mg/m^3
7439-93-2	lithium	3.3 mg/m^3
		(Contd. on page 4)

USA



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

7439-95-4	nagnesium	(Contd. of pag 18 mg/m ³
7439-96-5		3 mg/m^3
7440-02-0		4.5 mg/m^3
7440-09-7	potassium	2.3 mg/m^3
7440-17-7		3.9 mg/m^3
7440-22-4	silver	0.3 mg/m^3
7440-23-5	sodium	13 mg/m^3
7440-24-6	strontium	30 mg/m^3
7440-28-0	hallium	0.06 mg/m^3
7440-38-2	Arsenic	1.5 mg/m^3
7440-39-3	barium	1.5 mg/m^3
7440-41-7	beryllium	0.0023 mg/s
7440-43-9	cadmium	0.10 mg/m^3
7440-47-3	chromium	1.5 mg/m^3
7440-48-4	cobalt	0.18 mg/m^3
7440-50-8	copper	3 mg/m^3
7440-55-3	gallium	30 mg/m^3
7440-61-1	ıranium	0.6 mg/m^3
7440-62-2	vanadium	$3 mg/m^3$
7440-66-6	zinc	6 mg/m^3
7440-69-9	bismuth	15 mg/m^3
7440-74-6	Indium	0.3 mg/m^3
7782-49-2	selenium	0.6 mg/m^3
PAC-2:		
7439-89-6	ron	35 mg/m^3
7439-92-1	lead	120 mg/m ⁻
7439-93-2	ithium	36 mg/m^3
7439-95-4	nagnesium	200 mg/m
7439-96-5	nanganese	5 mg/m ³
7440-02-0	nickel	50 mg/m^3
7440-09-7	potassium	25 mg/m³
7440-17-7	rubidium	43 mg/m³
7440-22-4	silver	170 mg/m
7440-23-5	sodium	140 mg/m
7440-24-6	strontium	330 mg/m
7440-28-0	hallium	3.3 mg/m^3
7440-38-2	Arsenic	17 mg/m³
7440-39-3	barium	180 mg/m
7440-41-7	beryllium	0.025 mg/s
7440-43-9	cadmium	0.76 mg/m



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

	(Contd. of page
7440-47-3 chromium	17 mg/m^3
7440-48-4 cobalt	$2 mg/m^3$
7440-50-8 copper	33 mg/m^3
7440-55-3 gallium	330 mg/m³
7440-61-1 uranium	$5 mg/m^3$
7440-62-2 vanadium	5.8 mg/m^3
7440-66-6 zinc	21 mg/m³
7440-69-9 bismuth	170 mg/m^3
7440-74-6 Indium	3.3 mg/m^3
7782-49-2 selenium	6.6 mg/m^3
· PAC-3:	
7439-89-6 iron	150 mg/m^3
7439-92-1 lead	700 mg/m^3
7439-93-2 lithium	220 mg/m^3
7439-95-4 magnesium	1,200 mg/m
7439-96-5 manganese	1,800 mg/m
7440-02-0 nickel	99 mg/m³
7440-09-7 potassium	150 mg/m^3
7440-17-7 rubidium	260 mg/m³
7440-22-4 silver	990 mg/m³
7440-23-5 sodium	870 mg/m³
7440-24-6 strontium	2,000 mg/m
7440-28-0 thallium	20 mg/m^3
7440-38-2 Arsenic	100 mg/m^3
7440-39-3 barium	1,100 mg/m
7440-41-7 beryllium	0.1 mg/m^3
7440-43-9 cadmium	4.7 mg/m^3
7440-47-3 chromium	99 mg/m^3
7440-48-4 cobalt	20 mg/m^3
7440-50-8 copper	$\frac{200 \text{ mg/m}^3}{\text{mg}}$
7440-55-3 gallium	2,000 mg/m
7440-61-1 uranium	30 mg/m^3
7440-62-2 vanadium	35 mg/m^3
7440-66-6 zinc	120 mg/m^3
7440-69-9 bismuth	990 mg/m³
7440-74-6 Indium	20 mg/m^3
7782-49-2 selenium	40 mg/m^3

(Contd. on page 6)



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

(Contd. of page 5)

7 Handling and storage

- · Handling:
- **Precautions for safe handling** No special precautions are necessary if used correctly.
- · Information about protection against explosions and fires: No special measures required.
- · 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 receptacle tightly sealed.
- · Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- · Control parameters
- · Components with limit values that require monitoring at the workplace:

The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

- · Additional information: The lists that were valid during the creation were used as basis.
- · 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.

- · Breathing equipment: 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

· 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 observed.

(Contd. on page 7)



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

(Contd. of page 6)

· Eye protection:



Tightly sealed goggles or safety glasses

Information on basic physical and	chemical properties	
General Information		
Appearance:	71	
Form:	Liquid	
Color:	Dark brown	
Odor: Odor threshold:	Characteristic	
	Not determined.	
pH-value:	Not determined.	
Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	Undetermined.	
Flash point:	Not applicable.	
Flammability (solid, gaseous):	Not applicable.	
Decomposition temperature:	Not determined.	
Auto igniting:	Product is not selfigniting.	
Danger of explosion:	Product does not present an explosion hazard. Not determined.	
Explosion limits:		
Lower:	Not determined.	
Upper:	Not determined.	
Vapor pressure:	Not determined.	
Density:	Not determined.	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	
Solubility in / Miscibility with		
Water:	Fully miscible.	
Partition coefficient (n-octanol/wat	er): Not determined.	
Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
Solvent content:		
Water:	98.0 %	



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

(Contd. of page 7)

VOC content:	0.00 %
Solids content:	0.0 %
· Other information	No further relevant information available.

10 Stability and reactivity

- · Reactivity No further relevant information available.
- · Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- · Possibility of hazardous reactions No dangerous reactions known.
- · Conditions to avoid No further relevant information available.
- $\cdot \textbf{Incompatible materials:} \ \textit{No further relevant information available}.$
- · Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- · Information on toxicological effects
- · Acute toxicity:

· LD/LC50 values that are rea	levant for cla	assification:
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7697-37-2 nitric acid

Inhalative LC50/4 h 2.65 mg/l (ATE)

- · Primary irritant effect:
- · on the skin: Irritant to skin and mucous membranes.
- · on the eye: Irritating effect.
- · Sensitization: No sensitizing effects known.
- · Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations: Irritant

· Carcinogenic categories

· IARC (Inte	rnational Agency for Research on Cancer)	
7439-92-1	lead	2B
7440-02-0	nickel	2B
7440-38-2	Arsenic	1
7440-41-7	·	1
7440-43-9	cadmium	1
7440-47-3	chromium	3
7440-48-4		2B
7782-49-2	selenium	3

· NTP (National	1	oxicol	logy	Program,)
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1111 (11attonat 1	10xxcoogy 110gram)	
7439-92-1 lead	I I	?
7440-02-0 nicke	zel I	₹

(Contd. on page 9)



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

		(Contd. of page 8)
7440-38-2	Arsenic	K
7440-41-7	·	K
7440-43-9	cadmium	K
7440-48-4	cobalt	R
	(Occupational Safety & Health Administration)	
7440-38-2		
7440-43-9	cadmium	

12 Ecological information

- · Toxicity
- · Aquatic toxicity: No further relevant information available.
- · Persistence and degradability No further relevant information available.
- · Behavior in environmental systems:
- · Bioaccumulative potential No further relevant information available.
- · Mobility in soil No further relevant information available.
- Additional ecological information:
- · General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

- · Results of PBT and vPvB assessment
- · **PBT**: Not applicable.
- · vPvB: Not applicable.
- · Other adverse effects No further relevant information available.

13 Disposal considerations

- · Waste treatment methods
- · Recommendation:

Dispose of container and materials in accordance with local, regional and national regulations.

- · Uncleaned packagings:
- · Recommendation: Disposal must be made according to official regulations.
- · Recommended cleansing agent: Water, if necessary with cleansing agents.

· UN-Number	
· DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name	
$\cdot DOT$	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
·ADR	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O. (Nitric Acid)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitr

(Contd. on page 10)



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

	(Contd. of pa
Transport hazard class(es)	
DOT	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
CORROSIVE	
•	
Class	8 Corrosive substances
Label	8
ADR	
Class	0 (C1) C
Class Label	8 (C1) Corrosive substances 8
	·
IMDG, IATA	
23%	
<u></u>	
u	
Class	8 Corrosive substances
Label	8
Packing group	
DOT, ADR, IMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user Hazard identification number (Kemler code):	Warning: Corrosive substances
Hazara taentification number (Kemter coae): EMS Number:	F-A,S-B
Segregation groups	Acids
Stowage Category	A
Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex II of	
MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT	
Quantity limitations	On passenger aircraft/rail: 5 L
2	On cargo aircraft only: 60 L
ADR	
Excepted quantities (EQ)	Code: E1
1 · · · · · · · · · · · · · · · · · · ·	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml

-USA



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

	(Contd. of page 10)
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	5L Code: E1 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, N.O.S. (NITRIC ACID), 8, III

· · ·	tions/legislation specific for the substance or mixture
7732-18-5 Water	97.99
7697-37-2 nitric acid	2.0
7429-90-5 aluminium	0.00
Sara	
Section 355 (extremely hazardous substa	nces):
None of the ingredients is listed.	
Section 313 (Specific toxic chemical listi	ngs):
7429-90-5 aluminium	
7439-92-1 lead	
7439-96-5 manganese	
7440-02-0 nickel	
7440-22-4 silver	
7440-28-0 thallium	
7440-38-2 Arsenic	
7440-39-3 barium	
7440-41-7 beryllium	
7440-43-9 cadmium	
7440-47-3 chromium	
7440-48-4 cobalt	
7440-50-8 copper	
7440-62-2 vanadium	
7440-66-6 zinc	
7782-49-2 selenium	
TSCA (Toxic Substances Control Act):	
7732-18-5 Water	AC
7429-90-5 aluminium	AC
7439-89-6 iron	AC
7439-92-1 lead	AC



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

		(Contd. of pag
7439-95-4 m		ACTI
7439-96-5 m		ACTI
7440-02-0 ni		ACTI
7440-09-7 p		ACTI
7440-17-7 ri		ACTI
7440-22-4 si	lver	ACTI
7440-23-5 sc	dium	ACTI
7440-24-6 st		ACTI
7440-28-0 th	allium	ACTI
7440-38-2 A	rsenic	ACTI
7440-39-3 b	arium	ACTI
7440-41-7 be	eryllium	ACTI
7440-43-9 co	admium	ACTI
7440-47-3 ci	nromium	ACTI
7440-48-4 co		ACTI
7440-50-8 ca	ppper	ACTI
7440-55-3 g	allium	ACTI
7440-61-1 u	ranium	ACTI
7440-62-2 ve	unadium	ACTI
7440-66-6 zi	пс	ACTI
7440-69-9 bi	smuth	ACTI
7440-70-2 ca	ılcium	ACTI
7440-74-6 In	dium	ACTI
7782-49-2 se	lenium	ACTI
· Hazardous A	ir Pollutants	
7439-92-1 le	ad	
7439-96-5 m	anganese	
7440-48-4 co	=	
· Proposition (5	
· Chemicals ki	nown to cause cancer:	
7439-92-1 le	ad	
7440-02-0 ni	ckel	
7440-38-2 A	rsenic	
7440-41-7 be	eryllium	
7440-43-9 cd	admium	
7440-48-4 ce	pbalt	
· Chemicals ki	nown to cause reproductive toxicity for females:	
7439-92-1 le		
· Chemicals ki	nown to cause reproductive toxicity for males:	
7439-92-1 le		
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Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

7440-43-9	cadmium	(Contd. of page
	known to cause developmental toxicity:	
7439-92-1	<u>-</u>	
7440-43-9		
_	nity categories	
	ronmental Protection Agency)	
7439-92-1		B2
	manganese	D
7440-22-4		D
7440-38-2		A
7440-39-3		D, CBD(inh), NL(oral
7440-41-7	, ,	B1, K/L(inh), CBD(or
7440-43-9		BI
7440-47-3	chromium	D
7440-50-8	copper	D
7440-66-6	zinc	D, I, II
7782-49-2	selenium	D
TLV (Thre	shold Limit Value)	
7429-90-5	aluminium	
7439-92-1	lead	
7440-02-0	nickel	
7440-38-2	Arsenic	
7440-39-3	barium	
7440-41-7	beryllium	
7440-43-9		
7440-47-3	chromium	
7440-48-4	cobalt	
7440-61-1	uranium	
NIOSH-Ca	a (National Institute for Occupational Safety and I	Health)
7440-02-0	· · · · · · · · · · · · · · · · · · ·	,
7440-38-2		
7440-41-7		
7440-43-9		
	uranium	

- · National regulations:
- · Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.
- · Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

USA



Printing date 09/19/2022 Review date 09/19/2022

Trade name: STD AFT MULTI-ELEMENT H/HE

(Contd. of page 13)

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 shall not be held liable for any damage resulting from handling or from contact with the product.

· Department issuing SDS: Environmental, Health and Safety

· Contact:

Within the USA: 1-(800)-762-4000 Outside the USA: 1-(203)-712-8488

· Abbreviations and acronyms:

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation IATA: International Air Transport Association

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)

NFPA: National Fire Protection Association (USA) HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU) LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Skin Irrititation 2: Skin corrosion/irritation – Category 2

Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A

* * Data compared to the previous version altered.

USA