

1 Identification

- **Product identifier**
- **Trade name:** STD-AS QC 21 ELEMENTS
- **Article number** N9300281
- **Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

PerkinElmer Environmental Health
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com

- **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)

2 Hazard(s) identification

- **Classification of the substance or mixture**



Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.

Acute Tox. 5 H303 May be harmful if swallowed.

Acute Tox. 5 H313 May be harmful in contact with skin.

Acute Tox. 5 H333 May be harmful if inhaled.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms** GHS05
- **Signal word** Danger

- **Hazard-determining components of labeling:**

Hydrofluoric acid

- **Hazard statements**

H303 May be harmful if swallowed.

H313 May be harmful in contact with skin.

H333 May be harmful if inhaled.

H314 Causes severe skin burns and eye damage.

- **Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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Trade name: STD-AS QC 21 ELEMENTS

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· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMIS-ratings (scale 0 - 4)**



· **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.

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Hazardous components:**

7697-37-2	Nitric Acid solution ⚠ Skin Irrit. 2, H315	≤5%
7664-39-3	Hydrofluoric acid ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330 ⚠ Skin Corr. 1A, H314	0.1-<1%

· **Additional Components**

133-37-9	(+)-tartaric acid	0.1-<1%
7440-36-0	antimony	<0.1%
7440-38-2	Arsenic ⚠ Acute Tox. 3, H301; Acute Tox. 3, H331 ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	<0.1%
7440-41-7	beryllium ⚠ Acute Tox. 3, H301; Acute Tox. 2, H330 ⚠ Carc. 1B, H350; STOT RE 1, H372 ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; Skin Sens. 1, H317; STOT SE 3, H335	<0.1%
7440-43-9	cadmium (non-pyrophoric) ⚠ Acute Tox. 2, H330 ⚠ Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361; STOT RE 1, H372 ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	<0.1%
7440-70-2	calcium ⚠ Water-react. 2, H261	<0.1%
7440-47-3	chromium	<0.1%
7440-48-4	cobalt ⚠ Resp. Sens. 1, H334 ⚠ Skin Sens. 1, H317 ⚠ Aquatic Chronic 4, H413	<0.1%

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7440-50-8	copper	<0.1%
7439-89-6	iron	<0.1%
7439-92-1	lead ⚠ Acute Tox. 3, H301 ⚠ Repr. 1A, H360; STOT RE 2, H373 ⚠ Acute Tox. 4, H332	<0.1%
7439-93-2	lithium ⚠ Water-react. 1, H260 ⚠ Skin Corr. 1B, H314	<0.1%
7439-95-4	magnesium ⚠ Pyr. Sol. 1, H250; Water-react. 1, H260	<0.1%
1317-35-7	trimanganese tetraoxide	<0.1%
1313-27-5	molybdenum trioxide ⚠ STOT RE 2, H373 ⚠ Eye Irrit. 2A, H319; STOT SE 3, H335	<0.1%
7440-02-0	nickel ⚠ Carc. 2, H351 ⚠ Skin Sens. 1, H317	<0.1%
7782-49-2	selenium ⚠ Acute Tox. 3, H301; Acute Tox. 3, H331 ⚠ STOT RE 2, H373 Aquatic Chronic 4, H413	<0.1%
10042-76-9	strontium nitrate ⚠ Ox. Sol. 2, H272	<0.1%
7440-28-0	thallium ⚠ Acute Tox. 2, H300; Acute Tox. 2, H330 ⚠ STOT RE 2, H373 Aquatic Chronic 4, H413	<0.1%
7440-32-6	titanium ⚠ Self-heat. 1, H251; Water-react. 1, H260	<0.1%
7440-62-2	vanadium	<0.1%
7440-66-6	zinc ⚠ Water-react. 2, H261 ⚠ Aquatic Acute 1, H400; Aquatic Chronic 1, H410	<0.1%
7732-18-5	Water	92.5-95%

4 First-aid measures

· **Description of first aid measures**

· **General information:**

Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

· **After inhalation:**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Rub in Ca-gluconate solution or Ca-gluconate gel immediately.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** Immediately call a doctor.

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- **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:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
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.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
- **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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **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.

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· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**

7664-39-3 Hydrofluoric acid

PEL	Long-term value: 3 ppm as F
REL	Long-term value: 2.5 mg/m ³ , 3 ppm Ceiling limit value: 5* mg/m ³ , 6* ppm *15-min, as F
TLV	Long-term value: 0.41 mg/m ³ , 0.5 ppm Ceiling limit value: 1.64 mg/m ³ , 2 ppm as F; Skin; BEI

· **Ingredients with biological limit values:**

7664-39-3 Hydrofluoric acid

BEI	3 mg/g creatinine Medium: urine Time: prior to shift Parameter: Flourides (background)
	10 mg/g creatinine Medium: urine Time: end of shift Parameter: Flourides (background)

· **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.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

· **Breathing equipment:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.

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· **Eye protection:** Goggles recommended during refilling.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid

Color: Transparent

· **Odor:** Odorless

· **Odour threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: 0 °C (32 °F)

Boiling point/Boiling range: 100 °C (212 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.

Upper: Not determined.

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

· **Density at 20 °C (68 °F):** 1 g/cm³ (8.345 lbs/gal)

· **Relative density** Not determined.

· **Vapour density** Not determined.

· **Evaporation rate** Not determined.

· **Solubility in / Miscibility with**

Water: Fully miscible.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

Dynamic: Not determined.

Kinematic: Not determined.

· **Solvent content:**

Organic solvents: 0.0 %

Water: 94.8 %

Solids content: 0.2 %

· **Other information** No further relevant information available.

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10 Stability and reactivity

- **Reactivity**
- **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.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)

7440-38-2	Arsenic	1
7440-41-7	beryllium	1
7440-43-9	cadmium (non-pyrophoric)	1
7440-47-3	chromium	3
7440-48-4	cobalt	2B
7439-92-1	lead	2B
7440-02-0	nickel	1
7782-49-2	selenium	3

· NTP (National Toxicology Program)

7440-38-2	Arsenic	K
7440-41-7	beryllium	K
7440-43-9	cadmium (non-pyrophoric)	K
7439-92-1	lead	R
7440-02-0	nickel	R
7782-49-2	selenium	R

· OSHA-Ca (Occupational Safety & Health Administration)

7440-38-2	Arsenic
7440-43-9	cadmium (non-pyrophoric)

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.

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- **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:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.


14 Transport information

- | | |
|---|---|
| · UN-Number | UN3264 |
| · DOT, ADR, IMDG, IATA | |
| · UN proper shipping name | Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid solution, Hydrogen fluoride) |
| · DOT, ADR | |
| · IMDG, IATA | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acid solution, HYDROGEN FLUORIDE) |
| · Transport hazard class(es) | |
| · DOT | |
|  | |
| · Class | 8 Corrosive substances. |
| · Label | 8 |
| · ADR | |
|  | |
| · Class | 8 (C1) Corrosive substances |

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Trade name: STD-AS QC 21 ELEMENTS

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· Label	8
· IMDG, IATA	
	
· Class	8 Corrosive substances.
· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	III
· Environmental hazards:	
· Marine pollutant:	No
· Special precautions for user	Warning: Corrosive substances
· Danger code (Kemler):	80
· EMS Number:	F-A,S-B
· Segregation groups	Acids
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	UN3264, Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid solution, Hydrogen fluoride), 8, III

15 Regulatory information

· Safety, health and environmental regulations/legislation specific for the substance or mixture		
7697-37-2	Nitric Acid solution ⚠ Skin Irrit. 2, H315	≤5%
133-37-9	(+)-tartaric acid	0.1-<1%
7664-39-3	Hydrofluoric acid ⚠ Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330 ⚠ Skin Corr. 1A, H314	0.1-<1%
· Sara		
· Section 355 (extremely hazardous substances):		
7697-37-2	Nitric Acid solution	
· Section 313 (Specific toxic chemical listings):		
7697-37-2	Nitric Acid solution	
7440-36-0	antimony	
7440-38-2	Arsenic	
7440-41-7	beryllium	
7440-43-9	cadmium (non-pyrophoric)	
7440-47-3	chromium	
7440-48-4	cobalt	
7440-50-8	copper	
7439-92-1	lead	
1313-27-5	molybdenum trioxide	

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Trade name: STD-AS QC 21 ELEMENTS

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7440-02-0	<i>nickel</i>
7782-49-2	<i>selenium</i>
7440-28-0	<i>thallium</i>
7440-62-2	<i>vanadium</i>
7440-66-6	<i>zinc</i>

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

7697-37-2	<i>Nitric Acid solution</i>
133-37-9	<i>(+)-tartaric acid</i>
7440-36-0	<i>antimony</i>
7440-38-2	<i>Arsenic</i>
7440-41-7	<i>beryllium</i>
7440-43-9	<i>cadmium (non-pyrophoric)</i>
7440-70-2	<i>calcium</i>
7440-47-3	<i>chromium</i>
7440-48-4	<i>cobalt</i>
7440-50-8	<i>copper</i>
7439-89-6	<i>iron</i>
7439-92-1	<i>lead</i>
7439-93-2	<i>lithium</i>
7439-95-4	<i>magnesium</i>
1317-35-7	<i>trimanganese tetraoxide</i>

· **Proposition 65**

· **Chemicals known to cause cancer:**

7440-41-7	<i>beryllium</i>
7440-43-9	<i>cadmium (non-pyrophoric)</i>
7440-48-4	<i>cobalt</i>
7439-92-1	<i>lead</i>
7440-02-0	<i>nickel</i>

· **Chemicals known to cause reproductive toxicity for females:**

7439-92-1	<i>lead</i>
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· **Chemicals known to cause reproductive toxicity for males:**

7440-43-9	<i>cadmium (non-pyrophoric)</i>
7439-92-1	<i>lead</i>

· **Chemicals known to cause developmental toxicity:**

7440-43-9	<i>cadmium (non-pyrophoric)</i>
7439-92-1	<i>lead</i>

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

7440-38-2	<i>Arsenic</i>	<i>A</i>
7440-41-7	<i>beryllium</i>	<i>B1, K/L(inh), CBD(oral)</i>
7440-43-9	<i>cadmium (non-pyrophoric)</i>	<i>B1</i>
7440-47-3	<i>chromium</i>	<i>D</i>

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Trade name: STD-AS QC 21 ELEMENTS

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7440-50-8	copper	D
7439-92-1	lead	B2
1317-35-7	trimanganese tetraoxide	D
7782-49-2	selenium	D
7440-66-6	zinc	D, I, II

· TLV (Threshold Limit Value established by ACGIH)

7440-38-2	Arsenic	A1
7440-41-7	beryllium	A1
7440-43-9	cadmium (non-pyrophoric)	A2
7440-47-3	chromium	A4
7440-48-4	cobalt	A3
7439-92-1	lead	A3
7440-02-0	nickel	A5

· NIOSH-Ca (National Institute for Occupational Safety and Health)

7440-38-2	Arsenic
7440-41-7	beryllium
7440-43-9	cadmium (non-pyrophoric)
7440-02-0	nickel

· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms** GHS05

· **Signal word** Danger

· Hazard-determining components of labeling:

Hydrofluoric acid

· Hazard statements

H303 May be harmful if swallowed.

H313 May be harmful in contact with skin.

H333 May be harmful if inhaled.

H314 Causes severe skin burns and eye damage.

· Precautionary statements

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P321 Specific treatment (see on this label).

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· 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.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

(Contd. on page 12)

Trade name: STD-AS QC 21 ELEMENTS

(Contd. of page 11)

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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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.

· Contact:

With in the USA: 1-(800)-762-4000

Out side 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 Organization

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

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

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)

Acute Tox. 2: Acute toxicity, Hazard Category 2

Acute Tox. 5: Acute toxicity, Hazard Category 5

Acute Tox. 1: Acute toxicity, Hazard Category 1

Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A

Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B

Skin Irrit. 2: Skin corrosion/irritation, Hazard Category 2

· *** Data compared to the previous version altered.**

USA