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1 Identification

· **Product identifier**

· **Trade name: Environmental Standard Kit for DRC Instruments**
· **Article number** N9307112
· **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

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2 Hazard(s) identification

· **Classification of the substance or mixture**


Corrosion

Skin Corr. 1B H314 Causes severe skin burns and eye damage.
Eye Dam. 1 H318 Causes serious eye damage.

· **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 statements**
H314 Causes severe skin burns and eye damage.
· **Precautionary statements**
P260 Do not breathe dusts or mists.
P264 Wash thoroughly after handling.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 If swallowed: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).
P363 Wash contaminated clothing before reuse.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 3
Fire = 0
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = 3
Fire = 0
Reactivity = 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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3 Composition/information on ingredients

· **CAS No. Description**
7732-18-5 Water
· **EC number:** *231-791-2*
· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Hazardous components:**			
7697-37-2	*Nitric Acid*	*Ox. Liq. 2, H272* *Skin Corr. 1A, H314*	*5.0%*
7439-89-6	*iron*	*Acute Tox. 2, H300*	*0.1%*

· **Additional Components**		
7732-18-5	*Water*	*94.1%*
7429-90-5	*aluminium*	*0.1%*
7439-95-4	*magnesium* *Pyr. Sol. 1, H250; Water-react. 1, H260*	*0.1%*
7440-09-7	*potassium* *Water-react. 1, H260* *Skin Corr. 1B, H314*	*0.1%*
7440-23-5	*sodium* *Water-react. 1, H260* *Skin Corr. 1B, H314*	*0.1%*
12060-08-1	*scandium oxide*	*0.1%*
1313-27-5	*molybdenum trioxide* *Acute Tox. 3, H301* *Carc. 2, H351* *Eye Irrit. 2A, H319; STOT SE 3, H335*	*0.01%*

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1317-35-7	trimanganese tetraoxide	0.01%
7439-88-5	iridium	0.01%
7439-92-1	lead Carc. 2, H351; Repr. 1A, H360	0.01%
7439-97-6	mercury Acute Tox. 2, H330 Repr. 1B, H360; STOT RE 1, H372 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.01%
7440-02-0	nickel Carc. 2, H351; STOT RE 1, H372 Skin Sens. 1, H317	0.01%
7440-22-4	silver	0.01%
7440-28-0	thallium Acute Tox. 2, H300; Acute Tox. 2, H330 STOT RE 2, H373 Aquatic Chronic 4, H413	0.01%
7440-29-1	thorium Carc. 1A, H350	0.01%
7440-30-4	THULIUM	0.01%
7440-32-6	titanium Self-heat. 1, H251; Water-react. 1, H260	0.01%
7440-36-0	antimony Acute Tox. 3, H311; Acute Tox. 3, H331	0.01%
7440-38-2	Arsenic Acute Tox. 3, H301; Acute Tox. 3, H331 Carc. 1A, H350 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.01%
7440-39-3	barium Water-react. 2, H261	0.01%
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	0.01%
7440-43-9	cadmium Acute Tox. 3, H301; 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	0.01%
7440-47-3	chromium	0.01%
7440-48-4	cobalt Resp. Sens. 1, H334; Carc. 2, H351 Skin Sens. 1, H317 Aquatic Chronic 4, H413	0.01%
7440-50-8	copper	0.01%
7440-55-3	gallium Skin Corr. 1B, H314	0.01%

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7440-62-2	vanadium	0.01%
7440-70-2	calcium Water-react. 2, H261	0.01%
7440-74-6	Indium	0.01%
7647-01-0	Hydrochloric Acid Skin Corr. 1B, H314; Eye Dam. 1, H318 Acute Tox. 4, H302; STOT SE 3, H335	0.01%
7664-39-3	Hydrofluoric acid Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330 Skin Corr. 1A, H314	0.01%
7740-18-8	RUTHENIUM	0.01%
7782-49-2	selenium Acute Tox. 3, H301; Acute Tox. 3, H331 STOT RE 2, H373 Aquatic Chronic 4, H413	0.01%
10042-76-9	strontium nitrate Ox. Sol. 2, H272	0.01%
10043-35-3	boric acid Repr. 1B, H360	0.01%

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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. Then consult a doctor.
· **After swallowing:** Drink copious amounts of water and provide fresh air. Immediately call a 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**
During heating or in case of fire poisonous gases are produced.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

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6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Mount respiratory protective device.

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Wear protective equipment. Keep unprotected persons away.

· **Environmental precautions:**
Inform respective authorities in case of seepage into water course or sewage system.
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).
Use neutralizing agent.
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.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
7697-37-2	Nitric Acid	0.16 ppm
7439-89-6	iron	3.2 mg/m³
7439-95-4	magnesium	18 mg/m³
7440-09-7	potassium	2.3 mg/m³
7440-23-5	sodium	13 mg/m³
12060-08-1	scandium oxide	30 mg/m³
1313-27-5	molybdenum trioxide	2.3 mg/m³
1317-35-7	trimanganese tetraoxide	4.2 mg/m³
7439-88-5	iridium	4.7 mg/m³
7439-92-1	lead	0.15 mg/m³
7439-97-6	mercury	0.15 mg/m³
7440-02-0	nickel	4.5 mg/m³
7440-22-4	silver	0.3 mg/m³
7440-28-0	thallium	0.06 mg/m³
7440-29-1	thorium	30 mg/m³
7440-30-4	THULIUM	30 mg/m³
7440-32-6	titanium	30 mg/m³
7440-36-0	antimony	1.5 mg/m³
7440-38-2	Arsenic	1.5 mg/m³
7440-39-3	barium	1.5 mg/m³
7440-41-7	beryllium	0.0023 mg/m³
7440-43-9	cadmium	0.10 mg/m³
7440-47-3	chromium	1.5 mg/m³
7440-48-4	cobalt	0.18 mg/m³
7440-50-8	copper	3 mg/m³
7440-55-3	gallium	30 mg/m³
7440-62-2	vanadium	3 mg/m³

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7440-74-6	Indium	0.3 mg/m³
7647-01-0	Hydrochloric Acid	1.8 ppm
7782-49-2	selenium	0.6 mg/m³

· **PAC-2:**

7697-37-2	Nitric Acid	24 ppm
7439-89-6	iron	35 mg/m³
7439-95-4	magnesium	200 mg/m³
7440-09-7	potassium	25 mg/m³
7440-23-5	sodium	140 mg/m³
12060-08-1	scandium oxide	330 mg/m³
1313-27-5	molybdenum trioxide	43 mg/m³
1317-35-7	trimanganese tetraoxide	6.9 mg/m³
7439-88-5	iridium	51 mg/m³
7439-92-1	lead	120 mg/m³
7439-97-6	mercury	1.7 mg/m³
7440-02-0	nickel	50 mg/m³
7440-22-4	silver	170 mg/m³
7440-28-0	thallium	3.3 mg/m³
7440-29-1	thorium	330 mg/m³
7440-30-4	THULIUM	330 mg/m³
7440-32-6	titanium	330 mg/m³
7440-36-0	antimony	13 mg/m³
7440-38-2	Arsenic	17 mg/m³
7440-39-3	barium	180 mg/m³
7440-41-7	beryllium	0.025 mg/m³
7440-43-9	cadmium	0.76 mg/m³
7440-47-3	chromium	17 mg/m³
7440-48-4	cobalt	2 mg/m³
7440-50-8	copper	33 mg/m³
7440-55-3	gallium	330 mg/m³
7440-62-2	vanadium	5.8 mg/m³
7440-74-6	Indium	3.3 mg/m³
7647-01-0	Hydrochloric Acid	22 ppm
7782-49-2	selenium	6.6 mg/m³

· **PAC-3:**

7697-37-2	Nitric Acid	92 ppm
7439-89-6	iron	150 mg/m³
7439-95-4	magnesium	1,200 mg/m³
7440-09-7	potassium	150 mg/m³
7440-23-5	sodium	870 mg/m³

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12060-08-1	scandium oxide	2,000 mg/m³
1313-27-5	molybdenum trioxide	260 mg/m³
1317-35-7	trimanganese tetraoxide	41 mg/m³
7439-88-5	iridium	310 mg/m³
7439-92-1	lead	700 mg/m³
7439-97-6	mercury	8.9 mg/m³
7440-02-0	nickel	99 mg/m³
7440-22-4	silver	990 mg/m³
7440-28-0	thallium	20 mg/m³
7440-29-1	thorium	2,000 mg/m³
7440-30-4	THULIUM	2,000 mg/m³
7440-32-6	titanium	2,000 mg/m³
7440-36-0	antimony	80 mg/m³
7440-38-2	Arsenic	100 mg/m³
7440-39-3	barium	1,100 mg/m³
7440-41-7	beryllium	0.1 mg/m³
7440-43-9	cadmium	4.7 mg/m³
7440-47-3	chromium	99 mg/m³
7440-48-4	cobalt	20 mg/m³
7440-50-8	copper	200 mg/m³
7440-55-3	gallium	2,000 mg/m³
7440-62-2	vanadium	35 mg/m³
7440-74-6	Indium	20 mg/m³
7647-01-0	Hydrochloric Acid	100 ppm
7782-49-2	selenium	40 mg/m³

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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:** Keep respiratory protective device available.

· **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.

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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 following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.
At this time, the remaining constituent has no known exposure limits.

7697-37-2 Nitric Acid	
PEL	Long-term value: 5 mg/m³, 2 ppm
REL	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5 mg/m³, 2 ppm
TLV	Short-term value: 10 mg/m³, 4 ppm Long-term value: 5.2 mg/m³, 2 ppm

· **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.
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.
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.

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· **Eye protection:**

Tightly sealed goggles or safety glasses

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9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	*Liquid*
Color:	*Transparent*
· **Odor:**	*Characteristic*
· **Odor 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.*
· **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 at 20 °C (68 °F):**	*23 hPa (17.3 mm Hg)*
· **Density at 20 °C (68 °F):**	*1 g/cm³ (8.345 lbs/gal)*
· **Relative density**	*Not determined.*
· **Vapor 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:**	
Water:	*94.1 %*

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VOC content:	0.00 %
Solids content:	0.5 %
· **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.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** Caustic effect on skin and mucous membranes.
· **on the eye:**
Strong caustic effect.
Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
1313-27-5	molybdenum trioxide	2B
7439-92-1	lead	2B
7439-97-6	mercury	3
7440-02-0	nickel	2B
7440-29-1	thorium	1
7440-38-2	Arsenic	1
7440-41-7	beryllium	1
7440-43-9	cadmium	1
7440-47-3	chromium	3
7440-48-4	cobalt	2B

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7647-01-0	Hydrochloric Acid	3
7782-49-2	selenium	3

· **NTP (National Toxicology Program)**

7439-92-1	lead	R
7440-02-0	nickel	R
7440-38-2	Arsenic	K
7440-41-7	beryllium	K
7440-43-9	cadmium	K
7440-48-4	cobalt	R

· **OSHA-Ca (Occupational Safety & Health Administration)**

7440-38-2	Arsenic
7440-43-9	cadmium

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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.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

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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.

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14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN3264
· **UN proper shipping name**	
· **DOT**	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid)
· **ADR**	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acid)
· **IMDG**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acid), MARINE POLLUTANT
· **IATA**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acid)
· **Transport hazard class(es)**	
· **DOT**	

· **Class**	8 Corrosive substances
· **Label**	8
· **ADR**	

· **Class**	8 (C1) Corrosive substances
· **Label**	8
· **IMDG**	

· **Class**	8 Corrosive substances
· **Label**	8
· **IATA**	

· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III

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· **Environmental hazards:**	
· **Marine pollutant:**	No Symbol (fish and tree)
· **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.
· **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 On cargo aircraft only: 60 L
· **Remarks:**	Special marking with the symbol (fish and tree).
· **ADR**	
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **IMDG**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	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

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15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**

7732-18-5	Water		94.1%
7697-37-2	Nitric Acid	Ox. Liq. 2, H272 Skin Corr. 1A, H314	5.0%
7429-90-5	aluminium		0.1%

· **Sara**

· **Section 355 (extremely hazardous substances):**

7697-37-2	Nitric Acid
7647-01-0	Hydrochloric Acid

· **Section 313 (Specific toxic chemical listings):**

7697-37-2	Nitric Acid

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7429-90-5	aluminium
1313-27-5	molybdenum trioxide
1317-35-7	trimanganese tetraoxide
7439-92-1	lead
7439-97-6	mercury
7440-02-0	nickel
7440-22-4	silver
7440-28-0	thallium
7440-36-0	antimony
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
7647-01-0	Hydrochloric Acid
7782-49-2	selenium
10042-76-9	strontium nitrate

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

7732-18-5	Water	ACTIVE
7697-37-2	Nitric Acid	ACTIVE
7429-90-5	aluminium	ACTIVE
7439-89-6	iron	ACTIVE
7439-95-4	magnesium	ACTIVE
7440-09-7	potassium	ACTIVE
7440-23-5	sodium	ACTIVE
12060-08-1	scandium oxide	ACTIVE
1313-27-5	molybdenum trioxide	ACTIVE
1317-35-7	trimanganese tetraoxide	ACTIVE
7439-88-5	iridium	ACTIVE
7439-92-1	lead	ACTIVE
7439-97-6	mercury	ACTIVE
7440-02-0	nickel	ACTIVE
7440-22-4	silver	ACTIVE
7440-28-0	thallium	ACTIVE
7440-29-1	thorium	ACTIVE
7440-30-4	THULIUM	ACTIVE

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7440-32-6	titanium	ACTIVE
7440-36-0	antimony	ACTIVE
7440-38-2	Arsenic	ACTIVE
7440-39-3	barium	ACTIVE
7440-41-7	beryllium	ACTIVE
7440-43-9	cadmium	ACTIVE
7440-47-3	chromium	ACTIVE
7440-48-4	cobalt	ACTIVE
7440-50-8	copper	ACTIVE
7440-55-3	gallium	ACTIVE
7440-62-2	vanadium	ACTIVE
7440-70-2	calcium	ACTIVE

· **Hazardous Air Pollutants**

1317-35-7	trimanganese tetraoxide
7439-92-1	lead
7440-48-4	cobalt
7647-01-0	Hydrochloric Acid

· **Proposition 65**

· **Chemicals known to cause cancer:**

7439-92-1	lead
7440-02-0	nickel
7440-38-2	Arsenic
7440-41-7	beryllium
7440-43-9	cadmium
7440-48-4	cobalt

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

7439-92-1	lead

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

7439-92-1	lead
7440-43-9	cadmium

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

7439-92-1	lead
7439-97-6	mercury
7440-43-9	cadmium

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

1317-35-7	trimanganese tetraoxide	D
7439-92-1	lead	B2
7439-97-6	mercury	D

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7440-22-4	silver	D
7440-38-2	Arsenic	A
7440-39-3	barium	D, CBD(inh), NL(oral)
7440-41-7	beryllium	B1, K/L(inh), CBD(oral)
7440-43-9	cadmium	B1
7440-47-3	chromium	D
7440-50-8	copper	D
7782-49-2	selenium	D
10043-35-3	boric acid	I (oral)

· **TLV (Threshold Limit Value established by ACGIH)**

7429-90-5	aluminium	A4
7439-92-1	lead	A3
7439-97-6	mercury	A4
7440-02-0	nickel	A5
7440-38-2	Arsenic	A1
7440-39-3	barium	A4
7440-41-7	beryllium	A1
7440-43-9	cadmium	A2
7440-47-3	chromium	A4
7440-48-4	cobalt	A3
7647-01-0	Hydrochloric Acid	A4
10043-35-3	boric acid	A4

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

7440-02-0	nickel
7440-38-2	Arsenic
7440-41-7	beryllium
7440-43-9	cadmium

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

*
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

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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:**
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
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)
VOC: Volatile Organic Compounds (USA, EU)
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
Ox. Liq. 2: Oxidizing liquids – Category 2
Acute Tox. 2: Acute toxicity – Category 2
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
· **** Data compared to the previous version altered.***