04/08/2019	Kit Components
Product code	Description
N9307119	STD KIT ENV NexION KED/DRC MODE
Components:	
N9307805	STD Envir Custom 1
N9307806	STD Envir Custom 2
N9301721	Instrument Calibration Standard 2
N9300253	MERCURY A/S STANDARD
N9307807	Environmental Standard Custom 3
N9308592	STD INTERNAL STOCK SOLN 300X/D



Printing date 04/08/2019

Review date 04/08/2019

1 Identification	
· Product identifier	

- Trade name: <u>STD Envir Custom 1</u>
- Article number N9307805
- · 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

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-determining components of labeling: Nitric Acid*

· 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.

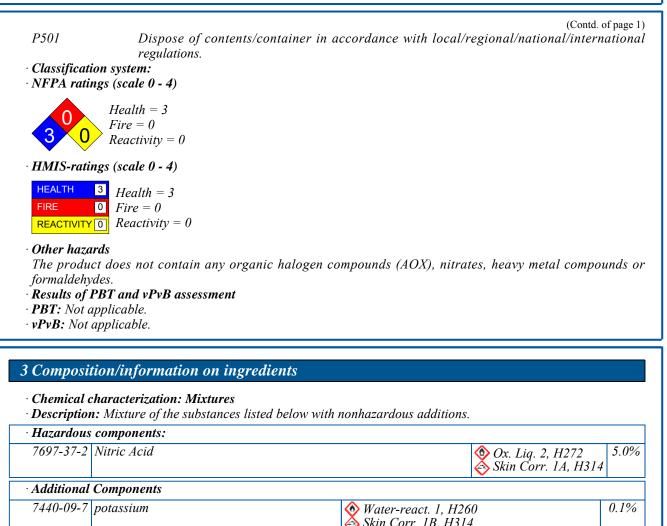
(Contd. on page 2)



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Trade name: STD Envir Custom 1



		🕎 Skin Corr. 1B, H314	
7440-23-5	sodium	🛞 Water-react. 1, H260 🕎 Skin Corr. 1B, H314	0.1%
7439-95-4	magnesium	🚸 Pyr. Sol. 1, H250; Water-react. 1, H260	0.1%
7440-70-2	calcium	🚸 Water-react. 2, H261	0.1%
7732-18-5	Water		94.6%

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.

(Contd. on page 3)



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(Contd. of page 2)

Trade name: STD Envir Custom 1

• *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.

6 Accidental release measures

- *Personal precautions, protective equipment and emergency procedures Mount respiratory protective device.*
- Wear protective equipment. Keep unprotected persons away.

• Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system. • 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
7440-09-7 potassium	$2.3 mg/m^3$
7440-23-5 sodium	13 mg/m ³
7439-95-4 magnesium	18 mg/m ³
· PAC-2:	
7697-37-2 Nitric Acid	24 ppm
7440-09-7 potassium	$25 mg/m^3$
7440-23-5 sodium	140 mg/m ³
7439-95-4 magnesium	200 mg/m ³
• PAC-3:	
7697-37-2 Nitric Acid	92 ppm
7440-09-7 potassium	150 mg/m ³
7440-23-5 sodium	870 mg/m ³
·	(Contd. on page 4)



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(Contd. of page 3)

 1.200 mg/m^3

Trade name: STD Envir Custom 1

7439-95-4 magnesium

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.

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:

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

(Contd. on page 5)



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Trade name: STD Envir Custom 1

(Contd. of page 4)

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.

• Eye protection:



Tightly sealed goggles or safety glasses

Information on basic physical and o	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:	Undetermined.	
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 $^{\circ}C$ (68 $^{\circ}F$):	23 hPa (17.3 mm Hg)	
Density:	Not determined.	
Relative density	Not determined.	
Vapor density	Not determined.	
Evaporation rate	Not determined.	

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Trade name: STD Envir Custom 1

		(Contd. of page 5
· Solubility in / Miscibility with	1	
Water:	Not miscible or difficult to mix.	
· Partition coefficient (n-octan	ol/water): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Water:	94.6 %	
VOC content:	0.00 %	
• 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.

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)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

(Contd. on page 7)

USA -



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Trade name: STD Envir Custom 1

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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.

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.

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. (nitracid)
IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (nitric acid)



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	(Contd. of pag
Transport hazard class(es)	
DOT	
Â	
A CONTRACTOR OF THE CONTRACTOR OF TO CONTRACTOR O	
CORROSIVE 8	
\checkmark	
Class	8 Corrosive substances
Label	8
ADR	
8	
Class	8 (C1) Corrosive substances
Label	8 (C1) Corrosive substances
IMDG, IATA	
(<u>-44</u> -54-)	
*	
Class	8 Corrosive substances
Label	8
Packing group	
DOT, ADR, IMDG, IATA	111
Environmental hazards:	
Marine pollutant:	No
-	Warning: Corrosive substances
Special precautions for user Danger code (Kemler):	80
EMS Number:	<i>F-A,S-B</i>
Segregation groups	Acids
Stowage Category	
Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex	
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	· · · ·
ADK Excepted quantities (EQ)	Code: El
Lever to quantities (Eg)	Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per outer packaging: 1000 ml
	(Contd. on pag



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	(Contd. of page 8)
· 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

Safety, hea	lth and environmental regulations/legis	lation specific for the substance or mixture	e
7732-18-5	Water		94.69
7697-37-2	Nitric Acid	Ox. Liq. 2, H2 Skin Corr. 1A,	72 5.0% H314
7440-23-5	sodium	Water-react. 1 Skin Corr. 1B,	
Sara	-		
Section 35.	5 (extremely hazardous substances):		
7697-37-2	Nitric Acid		
Section 31	3 (Specific toxic chemical listings):		
7697-37-2	Nitric Acid		
	xic Substances Control Act):		
0	ents are listed.		
7697-37-2	Nitric Acid		ACTIV
7440-09-7	potassium		ACTIV
7440-23-5	sodium		ACTIV
	magnesium		ACTIV
7440-70-2	calcium		ACTIV
7732-18-5	Water		ACTIV
Hazardous	Air Pollutants		
None of the	e ingredients is listed.		
Proposition	n 65		
Chemicals	known to cause cancer:		
None of the	e ingredients is listed.		
Chemicals	known to cause reproductive toxicity for	r females:	
None of the	e ingredients is listed.		
Chemicals	known to cause reproductive toxicity for	r males:	
None of the	e ingredients is listed.		
· Chemicals	known to cause developmental toxicity:		
M. C.I.	e ingredients is listed.		



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· Cancerogenity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

• TLV (Threshold Limit Value established by ACGIH)

None of the ingredients is listed.

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

None of the ingredients is listed.

· 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 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

PEL: Permissible Exposure Limit

(Contd. on page 11)

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value



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Trade name: STD Envir Custom 1

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USA

REL: Recommended Exposure Limit Ox. Liq. 2: Oxidizing liquids – 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.



Printing date 04/08/2019

1 Idontificatio

Review date 04/08/2019

1 Identification	
· Product identifier	

- Trade name: <u>STD Envir Custom 2</u> • Article number N9307806
- 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

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-determining components of labeling: Nitric Acid*

· 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.

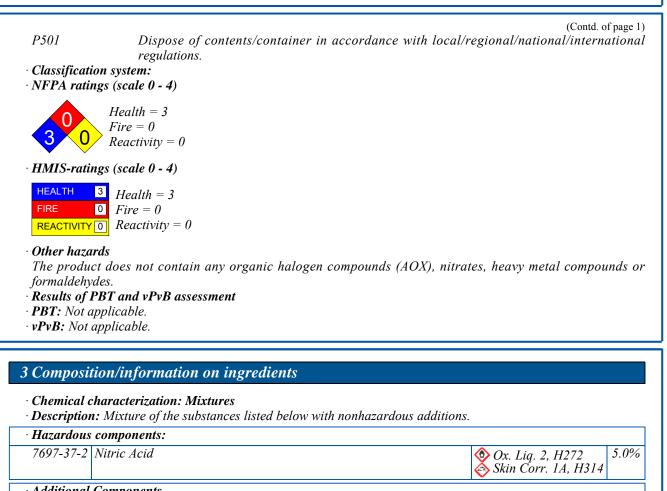
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· Additional Components			
7439-89-6	iron	🚸 Acute Tox. 2, H300	0.01%
1344-28-1	aluminium oxide		0.01%
7732-18-5	Water		94.98%

4 First-aid measures

- \cdot 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.

(Contd. on page 3)



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Trade name: STD Envir Custom 2

(Contd. of page 2)

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.

6 Accidental release measures

- *Personal precautions, protective equipment and emergency procedures Mount respiratory protective device.*
- Wear protective equipment. Keep unprotected persons away.
- *Environmental precautions:* Inform respective authorities in case of seepage into water course or sewage system. • *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/m ³
1344-28-1	aluminium oxide	15 mg/m ³
· PAC-2:		
7697-37-2	Nitric Acid	24 ppm
7439-89-6	iron	35 mg/m^3
1344-28-1	aluminium oxide	170 mg/m ³
• PAC-3:		
7697-37-2	Nitric Acid	92 ppm
7439-89-6	iron	150 mg/m ³
1344-28-1	aluminium oxide	990 mg/m ³

7 Handling and storage

· Handling:

· Precautions for safe handling

Ensure good ventilation/exhaustion at the workplace. Prevent formation of aerosols.



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Trade name: STD Envir Custom 2

(Contd. of page 3) • *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.

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:

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.

(Contd. on page 5)

USA



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Trade name: STD Envir Custom 2

(Contd. of page 4)

• Eye protection:



Tightly sealed goggles or safety glasses

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:	Undetermined.	
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:	Not determined.	
· Relative density	Not determined.	
· Vapor density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/wate	e r): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content: Water:	95.0 %	



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(Contd. of page 5)

Trade name: STD Envir Custom 2

VOC content: • Other information 0.00 % *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.

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)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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.

(Contd. on page 7)

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- · 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.

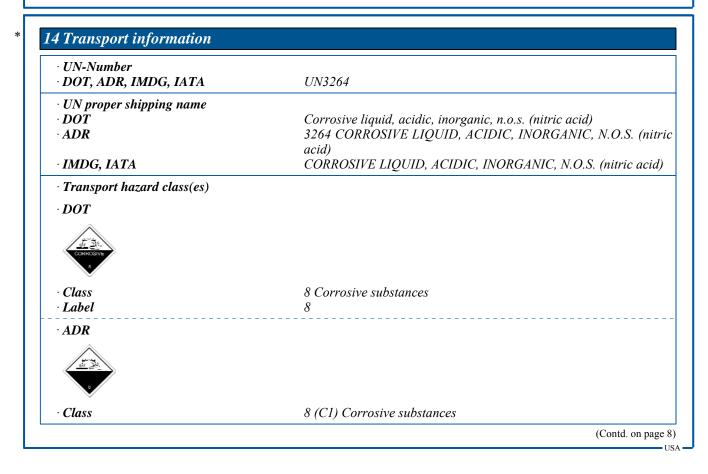
13 Disposal considerations

· 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.





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	(Contd. of page
Label	8
· IMDG, IATA	
Class	8 Corrosive substances
Label	8
Packing group	
DOT, ADR, IMDG, IATA	111
Environmental hazards:	
Marine pollutant:	No
Special precautions for user	Warning: Corrosive substances
Danger code (Kemler):	80 E. (.C. D.
EMS Number:	F-A,S-B
Segregation groups	Acids
Stowage Category	
Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex MARPOL73/78 and the IBC Code	II of Not applicable.
Transport/Additional information:	
Quantity limitations	On passenger aircraft/rail: 5 L
Quanta, initiations	On cargo aircraft only: 60 L
· ADR	· · · · · · · · · · · · · · · · · · ·
Excepted quantities (EQ)	Code: E1
Leepica quantités (EQ)	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.

Safety, hea	lth and environmental regulations/legislation specific for the subs	tance or mixture	
7732-18-5	Water		94.98%
7697-37-2	Nitric Acid	Ox. Liq. 2, H272 Skin Corr. 1A, H314	5.0%



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1344-28-1 aluminium oxide	(Contd. of page 0.01%	
Sara	0.01%	
Section 355 (extremely hazardous substances):		
7697-37-2 Nitric Acid		
· Section 313 (Specific toxic chemical listings):		
7697-37-2 Nitric Acid		
1344-28-1 aluminium oxide		
TSCA (Toxic Substances Control Act): All ingredients are listed.		
7697-37-2 Nitric Acid	ACTIVE	
7439-89-6 iron	ACTIVE	
1344-28-1 aluminium oxide	ACTIVE	
7732-18-5 Water	ACTIVE	
Hazardous Air Pollutants		
None of the ingredients is listed.		
Proposition 65		
Chemicals known to cause cancer:		
None of the ingredients is listed.		
Chemicals known to cause reproductive toxicity for females:		
None of the ingredients is listed.		
Chemicals known to cause reproductive toxicity for males:		
None of the ingredients is listed.		
Chemicals known to cause developmental toxicity:		
None of the ingredients is listed.		
Cancerogenity categories		
EPA (Environmental Protection Agency)		
None of the ingredients is listed.		
TLV (Threshold Limit Value established by ACGIH)		
1344-28-1 aluminium oxide	A_{\uparrow}	
NIOSH-Ca (National Institute for Occupational Safety and Health)		
None of the ingredients is listed.		
National regulations:		
<i>Information about limitation of use:</i> <i>Workers are not allowed to be exposed to this hazardous material. Exceptions can be mad</i> <i>certain cases.</i>	de by the authorities	
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.		



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Other info	rmation
Disclaimer	
and believed concerning it considered a should be use these are the	ion provided in this Material Safety Data Sheet is based on our present knowledge, to be correct at the date of publication. However, no representation is made is accuracy and completeness. It is intended as guidance only, and is not to be warranty or quality specification. All materials may present unknown hazards, and ed with caution. Although certain hazards are described, we cannot guarantee that only hazards which exist. PerkinElmer shall not be held admage resulting from handling or from contact with the product.
· Department	issuing SDS: Environmental, Health and Safety
· Contact:	
Within the U	SA: 1-(800)-762-4000
Outside the U	ISA: 1-(203)-712-8488
	s and acronyms:
RID: Règlemen International Tr ICAO: Internation	t international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning ansport of Dangerous Goods by Rail) onal Civil Aviation Organisation
Carriage of Dan	uropéen sur le transport des marchandises dangereuses par Route (European Agreement concerning the Internatio gerous Goods by Road) jonal Maritime Code for Dangerous Goods
	tment of Transportation
	nal Air Transport Association
ACGIH: Americ	an Conference of Governmental Industrial Hygienists
	ean Inventory of Existing Commercial Chemical Substances
	zan List of Notified Chemical Substances
	Abstracts Service (division of the American Chemical Society)
	Fire Protection Association (USA) us Materials Identification System (USA)
	rganic Compounds (USA, EU)
	Bioaccumulative and Toxic
	istent and very Bioaccumulative
	l Institute for Occupational Safety
	ional Safety & Health
TLV: Threshold	
	e Exposure Limit
	ded Exposure Limit izing liquids – Category 2
	izing liquids – Category 2 kin corrosion/irritation – Category 1A
	kin corrosion/irritation – Category 18 kin corrosion/irritation – Category 1B
	ious eye damage/eye irritation – Category 1
	ared to the previous version altered.



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l	1 Identification
	· Product identifier
	• Trade name: Instrument Calibration Standard 2
	· Article number N9301721
	· 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
	Corrosion
	Skin Corr. 1B H314 Causes severe skin burns and eye damage.
	Eye Dam. 1 H318 Causes serious eye damage.
	Δ
	Acute Tox. 4 H302 Harmful if swallowed.
	Acute Tox. 4 H312 Harmful in contact with skin.
	· Label elements
	• GHS label elements The product is classified and labeled according to the Globally Harmonized System (GHS).
	· Hazard pictograms GHS05, GHS07 · Signal word Danger
	· Hazard-determining components of labeling:
	Nitric Acid
	Hydrofluoric acid
	· Hazard statements
	H302+H312 Harmful if swallowed or in contact with skin.
	H314 Causes severe skin burns and eye damage.
	· Precautionary statements
	P260 Do not breathe dusts or mists.
	P264 Wash thoroughly after handling.
	P270 Do not eat, drink or smoke when using this product.
	P280Wear protective gloves/protective clothing/eye protection/face protection.P301+P312If swallowed: Call a poison center/doctor if you feel unwell.
	(Contd. on page 2)
	(conta. on page 2)



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	(Contd. of page 1)
P301 + P330 + P	331 If swallowed: Rinse mouth. Do NOT induce vomiting.
	353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/
1 505 +1 501 +1	shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
	<i>338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present</i>
1 303 +1 331 +1	and easy to do. Continue rinsing.
D210	
P310 P321	Immediately call a poison center/doctor.
	Specific treatment (see on this label).
P362+P364	Take off contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
· Classification s	
· NFPA ratings ((scale 0 - 4)
	Health = 3 $Fire = 0$
REACTIVITY 0	Reactivity = 0
formaldehydes.	
3 Composition	/information on ingredients
	acterization: Mixtures ixture of the substances listed below with nonhazardous additions.
· Hazardous com	nponents:
7697-37-2 Nitr	ic Acid (3) Ox Lia 2 H272 5.0%

/09/-3/-2	Nine Acia Skin Co	orr. 1A, H314
· Additional	Components	
7664-39-3	Hydrofluoric acid	0.3%
	<i>Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330</i> <i>Skin Corr. 1A, H314</i>	
133-37-9	(+-)-tartaric acid	0.2%
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, H33	35
		(Contd. on page 3)
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7110 12 0		ntd. of page 0.001%
/440-43-9	cadmium (non-pyrophoric) Acute Tox. 3, H301; Acute Tox. 2, H330 Muta. 2, H341; Carc. 1B, H350; Repr. 2, H361; STOT RE 1, H372	0.001%
	Aquatic Acute 1, H400; Aquatic Chronic 1, H410	
7440-70-2	calcium Ø Water-react. 2, H261	0.001%
7440-47-3	*	0.001%
7440-48-4		0.0019
///0/0/	Resp. Sens. 1, H334; Carc. 2, H351 Skin Sens. 1, H317 Aquatic Chronic 4, H413	
7440-50-8	copper	0.001%
7439-89-6	iron	0.001%
7439-92-1	*	0.001%
	a Carc. 2, H351; Repr. 1A, H360	-
7439-95-4	magnesium	0.001%
	O Pyr. Sol. 1, H250; Water-react. 1, H260	-
1317-35-7	trimanganese tetraoxide	0.001%
1313-27-5	molybdenum trioxide	0.001%
	Acute Tox. 3, H301 Carc. 2, H351 Eye Irrit. 2A, H319; STOT SE 3, H335	
7440-02-0		0.001%
7440-02-0	Carc. 2, H351; STOT RE 1, H372 Skin Sens. 1, H317	0.0017
7440-36-0	antimony	0.001%
	<i>↔ Acute Tox. 3, H311; Acute Tox. 3, H331</i>	-
7440-09-7		0.001%
	Water-react. 1, H260 Skin Corr. 1B, H314	_
7782-49-2	selenium	0.001%
	 Acute Tox. 3, H301; Acute Tox. 3, H331 STOT RE 2, H373 Aquatic Chronic 4, H413 	_
7440-22-4		0.001%
7440-23-5		0.0019
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	Water-react. 1, H260 Skin Corr. 1B, H314	
10042-76-9	strontium nitrate (2) Ox. Sol. 2, H272	0.001%
7440-28-0	· · · · · · · · · · · · · · · · · · ·	0.001%
	STOT RE 2, H373 Aquatic Chronic 4, H413	
		ntd. on page



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		(Contd. of page 3
7440-31-5	tin	0.001%
7440-32-6	titanium 🚸 Self-heat. 1, H251; Water-react. 1, H260	0.001%
7440-62-2	vanadium	0.001%
7429-90-5	aluminium	0.001%
7440-66-6	zinc Water-react. 2, H261 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.001%
7440-38-2	Arsenic Acute Tox. 3, H301; Acute Tox. 3, H331 Carc. 1A, H350 Aquatic Acute 1, H400; Aquatic Chronic 1, H410	0.001%
7440-39-3	barium Water-react. 2, H261	0.001%
7732-18-5	Water	94.474%

4 First-aid measures

· Description of first aid measures

• General information:

Immediately remove any clothing soiled by the product.

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

- 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.

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.

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.
- \cdot 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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Dana an al an	any tions material and an anon an analyza				
 Personal precautions, protective equipment and emergency procedures Mount respiratory protective device. Wear protective equipment. Keep unprotected persons away. Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system 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. 					
				ction Criteria for Chemicals	
			• PAC-1:		
				Nitric Acid	0.16 ppm
			7440-41-7	beryllium	0.0023 mg/m
				cadmium (non-pyrophoric)	0.10 mg/m ³
			7440-47-3		$1.5 mg/m^{3}$
			7440-48-4		0.18 mg/m ³
			7440-50-8	**	$3 mg/m^3$
			7439-89-6		$3.2 mg/m^3$
7439-92-1		$0.15 \ mg/m^3$			
	magnesium	18 mg/m³			
	trimanganese tetraoxide	$4.2 mg/m^3$			
	molybdenum trioxide	$2.3 mg/m^3$			
7440-02-0		$4.5 \ mg/m^3$			
7440-36-0	•	1.5 mg/m ³			
7440-09-7	A	$2.3 mg/m^3$			
7782-49-2		$0.6 \ mg/m^3$			
7440-22-4		$0.3 mg/m^{3}$			
7440-23-5		13 mg/m ³			
	strontium nitrate	$5.7 mg/m^3$			
7440-28-0		$0.06 \ mg/m^3$			
7440-31-5		6 mg/m ³			
7440-32-6		30 mg/m ³			
7440-62-2		$3 mg/m^3$			
7440-66-6		$6 mg/m^3$			
7440-38-2		$1.5 \ mg/m^3$			
	barium	$1.5 mg/m^3$			



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<i>PAC-2:</i>		
7697-37-2	Nitric Acid	24 ppm
7440-41-7	beryllium	0.025 mg/m
7440-43-9	cadmium (non-pyrophoric)	0.76 mg/m ³
7440-47-3	chromium	17 mg/m ³
7440-48-4	cobalt	$2 mg/m^3$
7440-50-8	copper	33 mg/m ³
7439-89-6	ron	35 mg/m ³
7439-92-1	'ead	120 mg/m ³
7439-95-4	nagnesium	200 mg/m ³
1317-35-7	trimanganese tetraoxide	6.9 mg/m ³
1313-27-5	nolybdenum trioxide	43 mg/m ³
7440-02-0	nickel	50 mg/m ³
7440-36-0	antimony	13 mg/m ³
7440-09-7	ootassium	25 mg/m ³
7782-49-2	selenium	6.6 mg/m ³
7440-22-4	silver	170 mg/m ³
7440-23-5	sodium	140 mg/m ³
10042-76-9	strontium nitrate	62 mg/m ³
7440-28-0	hallium	3.3 mg/m ³
7440-31-5	in	67 mg/m ³
7440-32-6	itanium	330 mg/m ³
7440-62-2	vanadium	5.8 mg/m ³
7440-66-6	zinc	21 mg/m ³
7440-38-2	Arsenic	17 mg/m ³
7440-39-3	barium	180 mg/m ³
PAC-3:		
7697-37-2	Nitric Acid	92 ppm
7440-41-7	beryllium	$0.1 \ mg/m^3$
7440-43-9	cadmium (non-pyrophoric)	$4.7 mg/m^3$
7440-47-3	chromium	99 mg/m ³
7440-48-4	cobalt	20 mg/m ³
7440-50-8	copper	200 mg/m ³
7439-89-6	ron	150 mg/m ³
7439-92-1	lead	700 mg/m ³
7439-95-4	nagnesium	1,200 mg/m
1317-35-7	trimanganese tetraoxide	41 mg/m ³
1313-27-5	nolybdenum trioxide	260 mg/m ³
7440-02-0	nickel	99 mg/m ³
7440-36-0	antimonv	80 mg/m ³

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7440-09-7		150 mg/m ³
7782-49-2	selenium	40 mg/m ³
7440-22-4	silver	990 mg/m ³
7440-23-5	sodium	870 mg/m ³
10042-76-9	strontium nitrate	370 mg/m ³
7440-28-0	thallium	20 mg/m ³
7440-31-5	tin	400 mg/m ³
7440-32-6	titanium	$2,000 \text{ mg/m}^3$
7440-62-2	vanadium	35 mg/m ³
7440-66-6	zinc	120 mg/m ³
7440-38-2	Arsenic	100 mg/m ³
7440-39-3	barium	1,100 mg/m ³

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.

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:

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.

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(Contd. of page 7) · 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. • Eye protection: Tightly sealed goggles or safety glasses

\cdot Information on basic physical and \cdot	chemical properties	
· General Information		
· Appearance:		
Form:	Liquid	
Color:	Transparent	
· Odor:	Characteristic	
· Odor threshold:	Not determined.	
• pH-value at 20 •C (68 •F):	<4	
· Change in condition		
Melting point/Melting range:	Undetermined.	
Boiling point/Boiling range:	100 °C (212 °F)	
· Flash point:	Not applicable.	



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		(Contd. of page 8)
· 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:	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/wate	r): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Water:	94.5 %	
VOC content:	0.00 %	
• 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.

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.

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Strong irritant with the danger of severe eye injury.

• Sensitization: No sensitizing effects known.

\cdot Additional toxicological information:

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

- Corrosive
- Irritant

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

-	ernational Agency for Research on Cancer)	
7440-41-7	beryllium	1
7440-43-9	cadmium (non-pyrophoric)	1
7440-47-3	chromium	3
7440-48-4	cobalt	2
7439-92-1	lead	2
1313-27-5	molybdenum trioxide	2
7440-02-0	nickel	2
7782-49-2	selenium	3
7440-38-2	Arsenic	1
NTP (Nati	onal Toxicology Program)	
7440-41-7	beryllium	
7440-43-9	cadmium (non-pyrophoric)	
7440-48-4	cobalt	-
7439-92-1	lead	
7440-02-0	nickel	
7440-38-2	Arsenic	-
OSHA-Ca	(Occupational Safety & Health Administration)	
	cadmium (non-pyrophoric)	
7440-38-2	Arsenic	

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.

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(Contd. of page 10)

· 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.*

· UN-Number · DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name	
· DOT	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid, hydrofluc acid)
·ADR	3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Ni Acid, hydrofluoric acid)
·IMDG	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Ac hydrofluoric acid), MARINE POLLUTANT
·IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Ac hydrofluoric acid)
• Class • Label	8 Corrosive substances 8
· Label	



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	(Contd. of page
Label	8
IMDG	
Class	8 Corrosive substances
Label	8
IATA	
LT THE STORE	
Class Label	8 Corrosive substances 8
	0
Packing group DOT, ADR, IMDG, IATA	III
Environmental hazards:	
Marine pollutant:	No
	Symbol (fish and tree)
Special precautions for user Danger code (Kemler):	<i>Warning: Corrosive substances</i> 80
EMS Number:	80 F-A,S-B
Segregation groups	Acids
Stowage Category	A
Stowage Code	SW2 Clear of living quarters.
Transport in bulk according to Annex . MARPOL73/78 and the IBC Code	II of Not applicable.
Transport/Additional information:	
DOT Quantity limitations	On passenger aircraft/rail: 5 L
Quantity annuations	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 Code: El
Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml
	Maximum net quantity per unter packaging: 50 ml Maximum net quantity per outer packaging: 1000 ml



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(Contd. of page 12)

Trade name: Instrument Calibration Standard 2

· UN ''Model Regulation'':

UN 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID, HYDROFLUORIC ACID), 8, III

· Safety, hea	Ith and environmental regulations/legislation specific for the substance or mixture	
7732-18-5	Water	94.474
7697-37-2	Nitric Acid	5.0%
	& Ox. Liq. 2, H272 Skin Corr. 1A, H314	
7664-39-3	Hydrofluoric acid	0.3%
	Acute Tox. 2, H300; Acute Tox. 1, H310; Acute Tox. 2, H330 Skin Corr. 1A, H314	
· Sara		•
· Section 355	o (extremely hazardous substances):	
7697-37-2	Nitric Acid	
· Section 313	<i>B</i> (Specific toxic chemical listings):	
	Nitric Acid	
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	
1317-35-7	trimanganese tetraoxide	
1313-27-5	molybdenum trioxide	
7440-02-0	nickel	
7440-36-0	antimony	
7782-49-2	selenium	
7440-22-4	silver	
10042-76-9	strontium nitrate	
7440-28-0	thallium	
7440-62-2	vanadium	
7429-90-5	aluminium	
7440-66-6	<i>zinc</i>	
7440-38-2	Arsenic	
7440-39-3	barium	
	ic Substances Control Act): ents are listed.	
7697-37-2	Nitric Acid	ACTIV



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Trade name: Instrument Calibration Standard 2

		(Contd. of page 13)	
133-37-9	(+-)-tartaric acid		
7440-41-7		ACTIVE	
	cadmium (non-pyrophoric)	ACTIVE	
7440-70-2		ACTIVE	
7440-47-3	chromium	ACTIVE	
7440-48-4	cobalt	ACTIVE	
7440-50-8	copper	ACTIVE	
7439-89-6	**	ACTIVE	
7439-92-1	lead	ACTIVE	
7439-95-4	magnesium	ACTIVE	
	trimanganese tetraoxide	ACTIVE	
	molybdenum trioxide	ACTIVE	
7440-02-0	nickel	ACTIVE	
7440-36-0	antimony	ACTIVE	
	potassium	ACTIVE	
7782-49-2	selenium	ACTIVE	
7440-22-4	silver	ACTIVE	
7440-23-5	sodium	ACTIVE	
10042-76-9	strontium nitrate	ACTIVE	
7440-28-0	thallium	ACTIVE	
7440-31-5	tin	ACTIVE	
7440-32-6	titanium	ACTIVE	
7440-62-2	vanadium	ACTIVE	
7429-90-5	aluminium	ACTIVE	
7440-66-6	zinc	ACTIVE	
7440-38-2	Arsenic	ACTIVE	
7440-39-3	barium	ACTIVE	
7732-18-5	Water	ACTIVE	
· Hazardous	Air Pollutants	·	
7440-48-4	cobalt		
7439-92-1	ead		
1317-35-7	1317-35-7 trimanganese tetraoxide		
· Proposition	· Proposition 65		
	nown to cause cancer:		
7440-41-7	•		
	7440-43-9 cadmium (non-pyrophoric)		
7440-48-4			
7439-92-1			
7440-02-0			
7440-38-2	Arsenic		
		(Contd. on page 15)	



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Trade name: Instrument Calibration Standard 2

Chemicals	s known to cause reproductive toxicity for females:	(Contd. of page
7439-92-1		
Chemicals	s known to cause reproductive toxicity for males:	
7440-43-9	cadmium (non-pyrophoric)	
7439-92-1	lead	
Chemicals	s known to cause developmental toxicity:	
7440-43-9	cadmium (non-pyrophoric)	
7439-92-1	lead	
Cancerog	enity categories	
	ironmental Protection Agency)	
	beryllium	B1, K/L(inh), CBD(ora
7440-43-9	cadmium (non-pyrophoric)	B1
7440-47-3	chromium	D
7440-50-8	copper	D
7439-92-1	lead	<i>B2</i>
1317-35-7	trimanganese tetraoxide	D
7782-49-2	elenium	D
7440-22-4	silver	D
7440-66-6	zinc	D, I, II
7440-38-2	Arsenic	A
7440-39-3	barium	D, CBD(inh), NL(oral)
TLV (Thr	eshold Limit Value established by ACGIH)	
7440-41-7	beryllium	A
7440-43-9	cadmium (non-pyrophoric)	A
7440-47-3	chromium	A
7440-48-4	cobalt	A
7439-92-1	lead	A
7440-02-0	nickel	A
7429-90-5	aluminium	A
7440-38-2	Arsenic	A
7440-39-3	barium	A
NIOSH-C	a (National Institute for Occupational Safety and Hea	lth)
7440-41-7	beryllium	
7440-43-9	cadmium (non-pyrophoric)	
7440 02 0	nickel	
7440-02-0		

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Trade name: Instrument Calibration Standard 2

· 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 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. 4: Acute toxicity – Category 4

Skin Corr. 1A: Skin corrosion/irritation – Category 1A Skin Corr. 1B: Skin corrosion/irritation – Category 1B

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.

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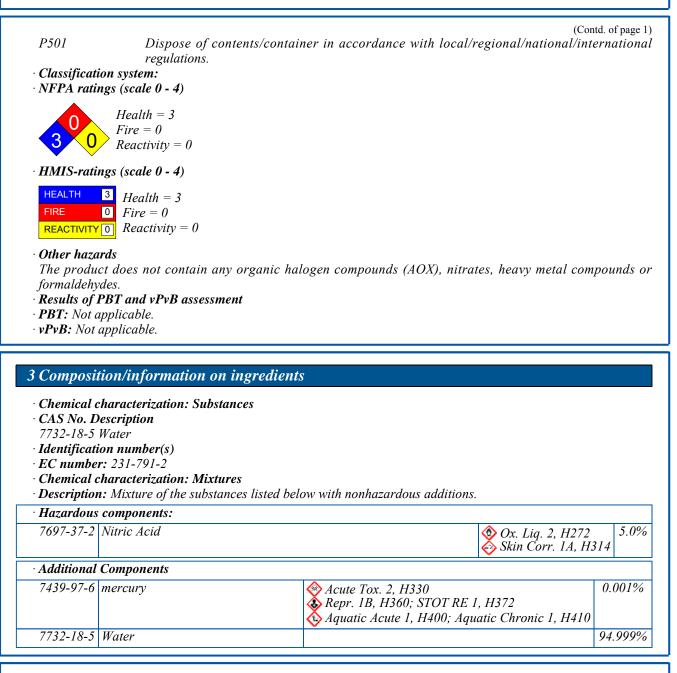
	Identification
	Product identifier
	Trade name: MERCURY A/S STANDARD
	Article number N9300253
	Application of the substance / the mixture Laboratory chemicals
	Details of the supplier of the safety data sheet
	Manufacturer/Supplier:
	PerkinElmer, Inc.
	710 Bridgeport Avenue Shelton, Connecticut 06484 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
_	
ź	Hazard(s) identification
	Classification of the substance or mixture
	Corrosion
	\mathbf{V}
	Skin Corr. 1B H314 Causes severe skin burns and eye damage.
	Eye Dam. 1 H318 Causes serious eye damage.
	Label elements
	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:
	Nitric Acid
	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.
	P301+P350+P351 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 wat
	shower.
	<i>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</i>
	P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if prese
	and easy to do. Continue rinsing.
	P310 Immediately call a poison center/doctor.
	P321Specific treatment (see on this label).P363Wash contaminated clothing before reuse.
	P363 Wash contaminated clothing before reuse. P405 Store locked up.
	(Contd. on page



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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.

(Contd. on page 3)

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(Contd. of page 2)

- 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.

6 Accidental release measures

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

Wear protective equipment. Keep unprotected persons away.

- Environmental precautions: Inform respective authorities in case of seepage into water course or sewage system.
- 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
7439-97-6	mercury	$0.15 mg/m^3$
· PAC-2:		
7697-37-2	Nitric Acid	24 ppm
7439-97-6	mercury	1.7 mg/m ³
• PAC-3:		
7697-37-2	Nitric Acid	92 ppm
7439-97-6	mercury	$8.9 \ mg/m^3$

7 Handling and storage

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

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Trade name: MERCURY A/S STANDARD

(Contd. of page 3) • *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.

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:

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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Trade name: MERCURY A/S STANDARD

(Contd. of page 4)

• Eye protection:



Tightly sealed goggles or safety glasses

· Information on basic physical and c	hemical properties	
· General Information		
· Appearance:	.	
Form:	Liquid	
Color: • Odor:	Transparent	
• Oaor: • Odor threshold:	Odorless Not determined.	
· pH-value:	Not determined.	
-	Not determined.	
· Change in condition		
Melting point/Melting range: Boiling point/Boiling range:	0 °C (32 °F) 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/cm ³ (8.345 lbs/gal)	
· Relative density	Not determined.	
· Vapor density	Not determined.	
• Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/wate	r): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Water:	95.0 %	



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(Contd. of page 5)

Trade name: MERCURY A/S STANDARD

VOC content: • 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.

0.00 %

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)

7439-97-6 mercury

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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.

(Contd. on page 7)

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Trade name: MERCURY A/S STANDARD

(Contd. of page 6)

- *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.

13 Disposal considerations

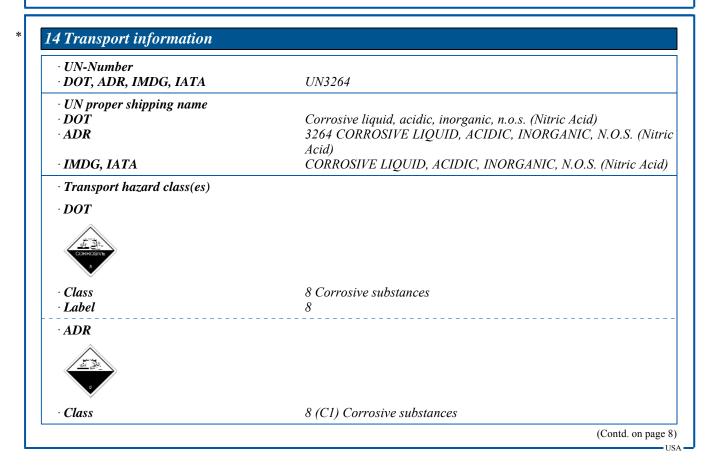
· Waste treatment methods

· 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.





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	(Contd. of pag
Label	8
IMDG, IATA	
Class Label	8 Corrosive substances 8
Packing group DOT, ADR, IMDG, IATA	111
Environmental hazards: Marine pollutant:	No
Special precautions for user Danger code (Kemler): EMS Number: Segregation groups Stowage Category Stowage Code	Warning: Corrosive substances 80 F-A,S-B Acids A SW2 Clear of living quarters.
Transport in bulk according to Annex MARPOL73/78 and the IBC Code	II of Not applicable.
Transport/Additional information: DOT Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
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) 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

	15 Regulato	ry information		
ſ	· Safety, hea	lth and environmental regulations/leg	gislation specific for the substance or mixture	
	7732-18-5	Water		94.999%
				(Contd. on page 9)



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		(Con	td. of page
7697-37-2	Nitric Acid	🕸 Ox. Liq. 2, H272 😵 Skin Corr. 1A, H314	5.0%
7439-97-6	mercury	 Acute Tox. 2, H330 Repr. 1B, H360; STOT RE 1, H372 Aquatic Acute 1, H400; Aquatic Chronic 1, H410 	0.001%
Sara	I		
Section 35.	5 (extremely hazardous substances):		
7697-37-2	Nitric Acid		
Section 31.	3 (Specific toxic chemical listings):		
7697-37-2	Nitric Acid		
7439-97-6	mercury		
	xic Substances Control Act):		
0	ents are listed.		
	Nitric Acid		ACTIVE
7439-97-6			ACTIVE
7732-18-5	Water		ACTIVE
Hazardous	s Air Pollutants		
None of the	e ingredients is listed.		
Proposition	n 65		
Chemicals	known to cause cancer:		
None of the	e ingredients is listed.		
Chemicals	known to cause reproductive toxicity	for females:	
None of the	e ingredients is listed.		
Chemicals	known to cause reproductive toxicity	o for males:	
	e ingredients is listed.		
Chemicals	known to cause developmental toxic	itv:	
7439-97-6	-		
	nity categories		
EPA (Envi	ironmental Protection Agency)		
7439-97-6	mercury		L
TLV (Thre	eshold Limit Value established by AC	GIH)	
-	mercury	,	A^{2}
/439-9/-0		l Safety and Health)	
	a (National Institute for Occupationa		
NIOSH-Ca	a (National Institute for Occupationa e ingredients is listed.		

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 10)

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Trade name: MERCURY A/S STANDARD

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

(Contd. of page 9)

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: 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 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.



1 Identification • Product identifier • Trade name: Environmental Standard Custom 3 • Article number N9307807 • Application of the substance / the mixture Laboratory chemicals • Datails of the supplier of the safety data sheet • Manufacturer/Supplier: PerkinElmer, Inc. • Tol Bridgeport Avemae Shelton, Connecticut 06484 USA Customer CareUS@perkinelmer.com 203-925-4600 • Demegnety telephone number: CILEMTREC (within AU) + (61)-290372994 2 Hazard(s) identification • Classification of the substance or mixture • Outside Lements • Skin Irrit. 2 II 315 Causes skin irritation. • Eye Irrit. 2A H319 Causes serious eye irritation. • Label elements • Hazard pictograms GIIO7 • Signal word Warning • Hazard statements • Procautionary statements • Producti s cause cautionally water, for several minutes. Remove contact lenses, if prese		2019	<i>Review date 04/08/201</i>
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$ \textbf{NFPA ratings (scale 0 - 4)} $ $ \textbf{Health = 2} \\ \textbf{Fire = 0} \\ \textbf{Reactivity = 0} $	Eye Irrit. 2A H3 • Label elements • GHS label elema • Hazard pictogra • Signal word Wa • Hazard statement H315 Causes skit H319 Causes set • Precautionary st P264 P280 P302+P352 P321 P305+P351+P3 P332+P313 P362+P364	 819 Causes serious eye irritation. ents The product is classified and labeled according to tims GHS07 rning nts in irritation. rious eye irritation. tatements Wash thoroughly after handling. Wear protective gloves / eye protection / face protection I fon skin: Wash with plenty of water. Specific treatment (see on this label). 828 If in eyes: Rinse cautiously with water for several I and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before r 	ction. minutes. Remove contact lenses, if prese m. reuse.
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	Eye Irrit. 2A H3 • Label elements • GHS label elemats • Hazard pictogra • Signal word Wa • Hazard statement H315 Causes skit H319 Causes ser • Precautionary stands P264 P280 P302+P352 P321 P305+P351+P3 P332+P313 P362+P364 P337+P313 • Classification sy • NFPA ratings (s	 819 Causes serious eye irritation. ents The product is classified and labeled according to times GHS07 rning mts in irritation. rious eye irritation. tatements Wash thoroughly after handling. Wear protective gloves / eye protection / face protect If on skin: Wash with plenty of water. Specific treatment (see on this label). 838 If in eyes: Rinse cautiously with water for several i and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before r If eye irritation persists: Get medical advice/attention stem: scale 0 - 4) 	ction. minutes. Remove contact lenses, if prese m. reuse.
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	Eye Irrit. 2A H3 • Label elements • GHS label elemants • Hazard pictogra • Signal word Wa • Hazard statement H315 Causes skath H319 Causes set • Precautionary state P264 P280 P302+P352 P321 P305+P351+P33 P332+P313 P332+P313 P362+P364 P337+P313 • Classification sy • NFPA ratings (s	 819 Causes serious eye irritation. ents The product is classified and labeled according to times GHS07 rning mts in irritation. rious eye irritation. tatements Wash thoroughly after handling. Wear protective gloves / eye protection / face protect If on skin: Wash with plenty of water. Specific treatment (see on this label). 838 If in eyes: Rinse cautiously with water for several is and easy to do. Continue rinsing. If skin irritation occurs: Get medical advice/attention Take off contaminated clothing and wash it before r If eye irritation persists: Get medical advice/attention stem: scale 0 - 4) ealth = 2 irre = 0 	ction. minutes. Remove contact lenses, if prese m. reuse.



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• HMIS-ratings (scale 0 - 4)

HEALTH2Health = 2FIRE0Fire = 0REACTIVITY0Reactivity = 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.

3 Composition/information on ingredients

· Chemical characterization: Mixtures

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

• Hazardous	s components:		
7697-37-2	Nitric Acid	(b) Ox. Liq. 2, H27 (c) Skin Corr. 1A, 1	2 H314 2.0%
· Additional	Components		
7440-29-1	thorium	🚸 Carc. 1A, H350	0.0001%
7440-61-1	uranium	Acute Tox. 2, H300; Acute Tox. 2, H330 STOT RE 2, H373 Aquatic Chronic 4, H413	0.0001%
7440-42-8	boron	♦ Acute Tox. 4, H302	0.0001%
7732-18-5	Water		97.9997%

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.

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• Advice for firefighters

· Protective equipment: No special measures required.

6 Accidental release measures

- · Personal precautions, protective equipment and emergency procedures Not required.
- *Environmental precautions:* Inform respective authorities in case of seepage into water course or sewage system. • *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:		
7697-37-2	Nitric Acid	0.16 ppm
7440-29-1	thorium	30 mg/m ³
7440-61-1	uranium	$0.6 \ mg/m^3$
7440-42-8	boron	1.9 mg/m ³
· PAC-2:		
7697-37-2	Nitric Acid	24 ppm
7440-29-1	thorium	330 mg/m ³
7440-61-1	uranium	$5 mg/m^3$
7440-42-8	boron	21 mg/m ³
· PAC-3:		
7697-37-2	Nitric Acid	92 ppm
7440-29-1	thorium	2,000 mg/m ³
7440-61-1	uranium	30 mg/m ³
7440-42-8	boron	130 mg/m ³

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.

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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:

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 eves 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.

• Eye protection:



Tightly sealed goggles or safety glasses

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· Information on basic physical and c	chemical properties	
· General Information	nomear properties	
· Appearance:		
Form:	Liquid	
Color:	Transparent	
· Odor:	Characteristic	
· Odor threshold:	Not determined.	
· pH-value:	Not determined.	
· Change in condition		
Melting point/Melting range:	Undetermined.	
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:	Not determined.	
· Relative density	Not determined.	
· Vapor density	Not determined.	
· Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/wate	e r): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		
Water:	98.0 %	
VOC content:	0.00 %	
• Other information	No further relevant information available.	

10 Stability and reactivity

• *Reactivity* No further relevant information available.

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· 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: 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 (International Agency for Research on Cancer)

7440-29-1 thorium

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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.

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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.

· UN-Number · DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name	
· DOT · ADR	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (N
	Acid)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Ac
• Transport hazard class(es)	
·DOT	
CORROSIVE	
· Class	8 Corrosive substances
·Label	8
·ADR	
2,7734	
×	
· Class · Label	8 (C1) Corrosive substances 8
	0
· IMDG, IATA	
1 A A A A A A A A A A A A A A A A A A A	
▼ Cl	
· Class · Label	8 Corrosive substances 8
	U
· Packing group · DOT, ADR, IMDG, IATA	111



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acc. to OSHA HCS

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	(Contd. of page
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
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
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 $(\widetilde{E}Q)$	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, N.O.S (NITRIC ACID), 8, III

*

15 Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture 7732-18-5 Water 97.9997% 7697-37-2 Nitric Acid 📀 Ox. Liq. 2, H272 Skin Corr. 1A, H314 2.0% 7440-61-1 uranium 0.0001% 🛞 Acute Tox. 2, H300; Acute Tox. 2, H330 🅉 STOT RE 2, H373 Aquatic Chronic 4, H413 · Sara · Section 355 (extremely hazardous substances): 7697-37-2 Nitric Acid · Section 313 (Specific toxic chemical listings): 7697-37-2 Nitric Acid • TSCA (Toxic Substances Control Act): All ingredients are listed. (Contd. on page 9)



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	(Contd. of page 8)
7697-37-2 Nitric Acid	ACTIVE
7440-29-1 thorium	ACTIVE
7440-61-1 uranium	ACTIVE
7440-42-8 boron	ACTIVE
7732-18-5 Water	ACTIVE
· Hazardous Air Pollutants	
None of the ingredients is listed.	
· Proposition 65	
· Chemicals known to cause cancer:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
· Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
· Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
· Cancerogenity categories	
· EPA (Environmental Protection Agency)	
7440-42-8 boron	I (oral)
TLV (Threshold Limit Value established by ACGIH)	
7440-61-1 uranium	Al
NIOSH-Ca (National Institute for Occupational Safety and Health)	
7440-61-1 uranium	
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 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

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Contact:
Within the USA: 1-(800)-762-4000
<i>Outside the USA: 1-(203)-712-8488</i>
· 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
Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
* Data compared to the previous version altered.
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Trade name: STD INTERNAL STOCK SOLN 300X/D

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· HMIS-ratings (scale 0 - 4)

HEALTH2Health = 2FIRE0Fire = 0REACTIVITY0Reactivity = 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.

3 Composition/information on ingredients

• Chemical characterization: Mixtures

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

	components:	
7697-37-2	Nitric Acid Ox. Liq. 2, H27	72 H314 2.0%
· Additional	Components	
7440-20-2	Scandium from Sacndium Oxide	0.01%
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	0.005%
7440-27-9	terbium	0.0001%
7440-74-6	Indium	0.0001%
7440-16-6	rhodium	0.0001%
7732-18-5	Water	97.9847%

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.

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Trade name: STD INTERNAL STOCK SOLN 300X/D

(Contd. of page 2)

• 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: Do not allow to enter sewers/ surface or ground water.
- \cdot 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

7607 27 2	Nitric Acid	016
		0.16 ppm
	Scandium from Sacndium Oxide	30 mg/m
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	3.2 mg/m
7440-27-9	terbium	1.2 mg/m
7440-74-6	Indium	0.3 mg/m
7440-16-6	rhodium	3 mg/m ³
PAC-2:		
7697-37-2	Nitric Acid	24 ppm
7440-20-2	Scandium from Sacndium Oxide	330 mg/m
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	35 mg/m ³
7440-27-9	terbium	13 mg/m ³
7440-74-6	Indium	3.3 mg/m
7440-16-6	rhodium	33 mg/m ³
PAC-3:		· · ·
7697-37-2	Nitric Acid	92 ppm
7440-20-2	Scandium from Sacndium Oxide	2,000 mg/m
7440-56-4	Germanium from Ammonium hexafluorogermanate(IV)	170 mg/m ³
7440-27-9	terbium	79 mg/m ³
7440-74-6	Indium	20 mg/m ³
7440-16-6	rhodium	200 mg/m ³

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.

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· 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:

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 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.

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• Eye protection:



Tightly sealed goggles or safety glasses

· Information on basic physical and	chemical properties	
· General Information		
· Appearance:		
Form:	Liquid	
Color: • Odor:	Dark brown Characteristic	
· Odor: · Odor threshold:	Not determined.	
· pH-value:	Not determined.	
-	Not determined.	
· Change in condition		
Melting point/Melting range: Boiling point/Boiling range:	Undetermined. 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:	Not determined.	
· Density:	Not determined.	
· Relative density	Not determined.	
· Vapor density	Not determined.	
• Evaporation rate	Not determined.	
· Solubility in / Miscibility with		
Water:	Not miscible or difficult to mix.	
· Partition coefficient (n-octanol/wa	t er): Not determined.	
· Viscosity:		
Dynamic:	Not determined.	
Kinematic:	Not determined.	
· Solvent content:		



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VOC content: • Other information 0.00 % *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.

11 Toxicological information

- · Information on toxicological effects
- Acute toxicity:
- · 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 (International Agency for Research on Cancer)

None of the ingredients is listed.

· NTP (National Toxicology Program)

None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients is listed.

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

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· 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.

UN-Number DOT, ADR, IMDG, IATA	UN3264
UN proper shipping name DOT ADR	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric Acid) 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nith Acid)
IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Nitric Acia
Transport hazard class(es)	
DOT	
CONSIGNED 2	
Class	8 Corrosive substances
Label	8
· ADR	
· Class	8 (C1) Corrosive substances
· Label	8
IMDG, IATA	
· Class	8 Corrosive substances
· Label	8



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acc. to OSHA HCS

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Packing group	
DOT, ĂĎR, ÎMDG, IATA	III
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Corrosive substances
Danger code (Kemler):	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
guantary tantanons	On cargo aircraft only: 60 L
4DD	
ADR Executed suggestition (EQ)	Code: El
Excepted quantities (EQ)	
	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
0	(NITRIC ACID), 8, III

15 Regulatory information Safety, health and environmental regulations/legislation specific for the substance or mixture 7732-18-5 Water 97.9847% 7697-37-2 Nitric Acid 2.0% 🔷 Ox. Liq. 2, H272 Skin Corr. 1A, H314 7440-20-2 Scandium from Sacndium Oxide 0.01% · Sara • Section 355 (extremely hazardous substances): 7697-37-2 Nitric Acid · Section 313 (Specific toxic chemical listings): 7697-37-2 Nitric Acid · TSCA (Toxic Substances Control Act): 7697-37-2 Nitric Acid ACTIVE (Contd. on page 9)



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None of the ingredients is listed.	
NIOSH-Ca (National Institute for Occupational Safety and Health)	
7440-16-6 rhodium	A
TLV (Threshold Limit Value established by ACGIH)	
None of the ingredients is listed.	
EPA (Environmental Protection Agency)	
Cancerogenity categories	
None of the ingredients is listed.	
Chemicals known to cause developmental toxicity:	
None of the ingredients is listed.	
Chemicals known to cause reproductive toxicity for males:	
None of the ingredients is listed.	
Chemicals known to cause reproductive toxicity for females:	
None of the ingredients is listed.	
Chemicals known to cause cancer:	
Proposition 65	
None of the ingredients is listed.	
Hazardous Air Pollutants	
7732-18-5 Water	ACTIV
7440-16-6 rhodium	ACTIVI
7440-74-6 Indium	ACTIV
7440-27-9 terbium	ACTIV
7440-20-2Scandium from Sacndium Oxide7440-56-4Germanium from Ammonium hexafluorogermanate(IV)	ACTIV

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

· Water hazard class: Generally not 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 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.

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• 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 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 Skin Corr. 1A: Skin corrosion/irritation – Category 1A
Skin Corr. 1A. Skin corrosion/irritation – Category 1A Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
\cdot * Data compared to the previous version altered.
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