

Safety Data Sheet
Menarut 91/155 EC

Printing date 09/24/2015

Reviewed on 09/24/2015

1 Identification

- **Product identifier**
- **Product Name:** Environmental Spike Mix, Part Number 5183-4687
- **Part Number:** 5183-4687
- **Relevant identified uses of the substance or mixture and uses advised against** No further relevant information available.
- **Application of the substance / the mixture**
Analytical Chemistry
A 100mL Solution
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
- **Information department:** product safety department
- **Emergency telephone number:** CHEMTREC®: 1-800-815-308

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
hydrofluoric acid
- **Hazard statements**
Causes severe skin burns and eye damage.
- **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not breathe dust/fume/gas/mist/vapors/spray.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

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3 Composition/information on ingredients
· Chemical characterization: Mixtures
· Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:

7697-37-2	nitric acid	⚠ Ox. Liq. 3, H272; ⚠ Skin Corr. 1A, H314	5.0%
7664-39-3	hydrofluoric acid	⚠ Acute Tox. 2, H300; ⚠ Acute Tox. 1, H310; ⚠ Acute Tox. 2, H330; ⚠ Skin Corr. 1A, H314	0.1%

· Chemical identification of the substance/preparation

87-69-4	(+)-tartaric acid ⚠ Eye Irrit. 2, H319	0.2%
7439-89-6	iron ⚠ Acute Tox. 2, H300	0.1%
7439-95-4	magnesium ⚠ Pyr. Sol. 1, H250; ⚠ Water-react. 1, H260	0.1%
7440-09-7	Potassium from Potassium nitrate ⚠ Ox. Sol. 2, H272	0.1%
7440-23-5	Sodium from Sodium carbonate ⚠ Eye Irrit. 2, H319	0.1%
7440-70-2	Calcium from Calcium carbonate ⚠ Eye Dam. 1, H318; ⚠ Skin Irrit. 2, H315; ⚠ STOT SE 3, H335	0.1%
7429-90-5	aluminium ⚠ Pyr. Sol. 1, H250; ⚠ Water-react. 2, H261	0.01%
7439-92-1	Lead from Lead Oxide ⚠ Repr. 1A, H360; ⚠ STOT RE 2, H373; ⚠ Aquatic Acute 1, H400; ⚠ Aquatic Chronic 1, H410; ⚠ Acute Tox. 4, H302; ⚠ Acute Tox. 4, H332	0.01%
7439-96-5	manganese	0.01%
7439-98-7	molybdenum	0.01%
7440-02-0	nickel ⚠ Carc. 2, H351; ⚠ STOT RE 1, H372; ⚠ Skin Sens. 1, H317	0.01%
7440-22-4	silver	0.01%
7440-28-0	Thallium from Thallium nitrate ⚠ Acute Tox. 2, H300; ⚠ Acute Tox. 2, H330; ⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 2, H411	0.01%
7440-36-0	antimony	0.01%
7440-38-2	arsenic ⚠ Acute Tox. 3, H301; ⚠ Acute Tox. 3, H331; ⚠ Aquatic Acute 1, H400; ⚠ Aquatic Chronic 1, H410	0.01%
7440-39-3	Barium from Barium carbonate ⚠ Acute Tox. 4, H302	0.01%
7440-41-7	Beryllium from Beryllium Acetate ⚠ Acute Tox. 2, H300; ⚠ Acute Tox. 2, H310; ⚠ Acute Tox. 2, H330; ⚠ Carc. 1A, H350	0.01%
7440-43-9	cadmium (non-pyrophoric) ⚠ Acute Tox. 2, H330; ⚠ Muta. 2, H341; ⚠ Carc. 1B, H350; ⚠ Repr. 2, H361; ⚠ STOT RE 1, H372; ⚠ Aquatic Acute 1, H400; ⚠ Aquatic Chronic 1, H410	0.01%
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate ⚠ Ox. Liq. 2, H272; ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2, H319	0.01%
7440-48-4	cobalt ⚠ Resp. Sens. 1, H334; ⚠ Skin Sens. 1, H317; ⚠ Aquatic Chronic 4, H413	0.01%
7440-50-8	copper	0.01%
7440-61-1	Uranium from Uranyl Nitrate Hexahydrate ⚠ Acute Tox. 2, H300; ⚠ Acute Tox. 2, H330; ⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 2, H411	0.01%
7440-62-2	Vanadium from Ammonium trioxovanadate ⚠ Acute Tox. 3, H301; ⚠ Skin Irrit. 2, H315; ⚠ Eye Irrit. 2, H319; ⚠ STOT SE 3, H335	0.01%
7440-66-6	zinc powder -zinc dust (stabilized) ⚠ Aquatic Acute 1, H400; ⚠ Aquatic Chronic 1, H410	0.01%
7782-49-2	selenium ⚠ Acute Tox. 3, H301; ⚠ Acute Tox. 3, H331; ⚠ STOT RE 2, H373; ⚠ Aquatic Chronic 4, H413	0.01%

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7732-18-5 water, distilled, conductivity or of similar purity

94.01%

· **Additional information:** For the wording of the listed risk phrases refer to section 16.**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.
- **Information for 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:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
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.

7 Handling and storage

- **Handling:**
- **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.

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 · **Control parameters**

 · **Components with limit values that require monitoring at the workplace:**
7697-37-2 nitric acid

 PEL (Malaysia) 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:**

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

 · **Protection of hands:**


Protective gloves

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

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

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

 · **Material of gloves**

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

 · **Penetration time of glove material**

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

 · **Eye protection:**


Tightly sealed goggles

9 Physical and chemical properties

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

 · **General Information**

 · **Appearance:**

Form: Liquid

Color: Colorless

 · **Odor:** Odorless

 · **Odour Threshold:** Not applicable.

 · **pH-value:** <1

 · **Change in condition**

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

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

 · **Flash point:** Not applicable.

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

 · **Ignition temperature:**

Decomposition temperature: Not applicable.

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· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not applicable.
Upper:	Not applicable.
· Vapor pressure at 20 °C:	23 hPa
· Density	1,0 g/mL @ 20 °C
· Relative density	Not applicable.
· Vapour density	Not applicable.
· Evaporation rate	Not applicable.
· Solubility in / Miscibility with Water:	Miscible
· Partition coefficient (n-octanol/water):	Not applicable.
· Viscosity:	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· Solvent content:	
Organic solvents:	0,0 %
Water:	94,0 %
· Solids content:	0,9 %
· 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.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Corrosive
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)		
7439-92-1	Lead from Lead Oxide	2B
7440-02-0	nickel	1
7440-38-2	arsenic	1
7440-41-7	Beryllium from Beryllium Acetate	1
7440-43-9	cadmium (non-pyrophoric)	1
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	3

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7440-48-4	cobalt	2B
7782-49-2	selenium	3
· NTP (National Toxicology Program)		
7439-92-1	Lead from Lead Oxide	R
7440-02-0	nickel	R
7440-38-2	arsenic	K
7440-41-7	Beryllium from Beryllium Acetate	K
7440-43-9	cadmium (non-pyrophoric)	K
7782-49-2	selenium	R
· OSHA-Ca (Occupational Safety & Health Administration)		
7440-38-2	arsenic	
7440-43-9	cadmium (non-pyrophoric)	

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **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:**
Water hazard class 2 (Self-assessment): hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach bodies of water or drainage ditch undiluted or unneutralized.
Danger to drinking water if even small quantities leak into the ground.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	UN3264
· UN proper shipping name	
· DOT	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution, Hydrofluoric acid)
· ADR	3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution, Hydrofluoric acid)
· IMDG, IATA	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION, HYDROFLUORIC ACID)

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 · **Transport hazard class(es)**

 · **DOT**

 · **Class**

8 Corrosive substances

 · **Label**

8

 · **ADR, IMDG, IATA**

 · **Class**

8 Corrosive substances

 · **Label**

8

 · **Packing group**

 · **DOT, ADR, IMDG, 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

 · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC**

 · **Code**

Not applicable.

 · **Transport/Additional information:**

 · **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.S. (NITRIC ACID SOLUTION, HYDROFLUORIC ACID), 8, III, (E)

15 Regulatory information

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

 · **Sara**

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

7697-37-2 nitric acid

7664-39-3 hydrofluoric acid

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

7697-37-2 nitric acid

7664-39-3 hydrofluoric acid

7429-90-5 aluminium

7439-92-1 Lead from Lead Oxide

7439-96-5 manganese

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7440-02-0	nickel
7440-22-4	silver
7440-28-0	Thallium from Thallium nitrate
7440-36-0	antimony
7440-38-2	arsenic
7440-39-3	Barium from Barium carbonate
7440-41-7	Beryllium from Beryllium Acetate
7440-43-9	cadmium (non-pyrophoric)
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate
7440-48-4	cobalt

· TSCA (Toxic Substances Control Act):

All ingredients are listed.

· Proposition 65
· Chemicals known to cause cancer:

7439-92-1	Lead from Lead Oxide
7440-02-0	nickel
7440-38-2	arsenic
7440-41-7	Beryllium from Beryllium Acetate
7440-43-9	cadmium (non-pyrophoric)
7440-48-4	cobalt

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

7440-43-9	cadmium (non-pyrophoric)
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· Chemicals known to cause developmental toxicity:

7440-43-9	cadmium (non-pyrophoric)
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· Carcinogenic categories
· EPA (Environmental Protection Agency)

7439-92-1	Lead from Lead Oxide	B2
7439-96-5	manganese	D
7440-22-4	silver	D
7440-38-2	arsenic	A
7440-39-3	Barium from Barium carbonate	D, CBD(inh), NL(oral)
7440-41-7	Beryllium from Beryllium Acetate	B1, K/L(inh), CBD(oral)
7440-43-9	cadmium (non-pyrophoric)	B1
7440-50-8	copper	D
7440-66-6	zinc powder -zinc dust (stabilized)	D, I, II
7782-49-2	selenium	D

· TLV (Threshold Limit Value established by ACGIH)

7429-90-5	aluminium	A4
7439-92-1	Lead from Lead Oxide	A3
7439-98-7	molybdenum	A3
7440-02-0	nickel	A5
7440-38-2	arsenic	A1
7440-39-3	Barium from Barium carbonate	A4
7440-43-9	cadmium (non-pyrophoric)	A2
7440-48-4	cobalt	A3
7440-61-1	Uranium from Uranyl Nitrate Hexahydrate	A1

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· NIOSH-Ca (National Institute for Occupational Safety and Health)	
7440-02-0	nickel
7440-38-2	arsenic
7440-43-9	cadmium (non-pyrophoric)
7440-61-1	Uranium from Uranyl Nitrate Hexahydrate

- **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
hydrofluoric acid
- **Hazard statements**
Causes severe skin burns and eye damage.
- **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not breathe dust/fume/gas/mist/vapors/spray.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER/doctor.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

Disclaimer: The information contained in this document is based on Agilent's state of knowledge at the time of preparation. No warranty as to its accurateness, completeness or suitability for a particular purpose is expressed or implied.

- **Department issuing SDS:** product safety department
- **Contact:**
Agilent Technologies Manufacturing GmbH & Co. KG
0800 603 1000
pdl-msds_author@agilent.com
- **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)
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Ox. Liq. 3: Oxidising Liquids, Hazard Category 3
Acute Tox. 2: Acute toxicity, Hazard Category 2
Acute Tox. 1: Acute toxicity, Hazard Category 1
Skin Corr. 1A: Skin corrosion/irritation, Hazard Category 1A
Skin Corr. 1B: Skin corrosion/irritation, Hazard Category 1B
Eye Dam. 1: Serious eye damage/eye irritation, Hazard Category 1