

Safety Data Sheet acc. to OSHA HCS

Printing date 08/10/2018

Reviewed on 08/10/2018

1 Identification

- **Product identifier**
- **Product Name:** Quality Control Standard 21
- **Part Number:**
QC-21
QC-21-250
QC-21-500
- **Application of the substance / the mixture** Certified Reference Material
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SPEX CertiPrep, LLC.
203 Norcross Ave, Metuchen,
NJ 08840 USA
- **Information department:** product safety department
- **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 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**

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.

Specific treatment (see on this label).

Store locked up.

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

- **Classification system:**

- **NFPA ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 3

Fire = 0

Reactivity = 0

- **Other hazards**

- **Results of PBT and vPvB assessment**

- **PBT:** Not applicable.

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· **vPvB:** Not applicable.

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	5.0%
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· **Chemical identification of the substance/preparation**

87-69-4	(+)-tartaric acid	0.1%
7664-39-3	hydrofluoric acid	0.1%
7439-96-5	manganese	0.01%
7440-32-6	titanium	0.01%
7439-92-1	Lead from Lead Oxide	0.01%
7440-50-8	copper	0.01%
7440-66-6	zinc powder -zinc dust (stabilized)	0.01%
7440-38-2	arsenic	0.01%
7439-89-6	iron	0.01%
7440-48-4	cobalt	0.01%
7440-47-3	chromium	0.01%
7440-24-6	strontium	0.01%
7440-41-7	beryllium	0.01%
7440-62-2	Vanadium from Ammonium trioxovanadate	0.01%
7439-93-2	Lithium from Lithium carbonate	0.01%
7782-49-2	selenium	0.01%
7440-43-9	cadmium (non-pyrophoric)	0.01%
7440-70-2	calcium	0.01%
7439-98-7	molybdenum	0.01%
7440-28-0	Thallium from Thallium nitrate	0.01%
7439-95-4	magnesium	0.01%
7440-36-0	antimony	0.01%
7440-02-0	nickel	0.01%
7732-18-5	water, distilled, conductivity or of similar purity	94.59%

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.
 Do not give anything to eat or drink - Do not induce vomiting
- **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:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

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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.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

7697-37-2	nitric acid	0.16 ppm
87-69-4	(+)-tartaric acid	1.6 mg/m ³
7439-96-5	manganese	3 mg/m ³
7440-32-6	titanium	30 mg/m ³
7439-92-1	Lead from Lead Oxide	0.15 mg/m ³
7440-50-8	copper	3 mg/m ³
7440-66-6	zinc powder -zinc dust (stabilized)	6 mg/m ³
7440-38-2	arsenic	1.5 mg/m ³
7439-89-6	iron	3.2 mg/m ³
7440-48-4	cobalt	0.18 mg/m ³
7440-47-3	chromium	1.5 mg/m ³
7440-24-6	strontium	30 mg/m ³
7440-41-7	beryllium	0.0023 mg/m ³
7440-62-2	Vanadium from Ammonium trioxovanadate	3 mg/m ³
7439-93-2	Lithium from Lithium carbonate	3.3 mg/m ³
7782-49-2	selenium	0.6 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.10 mg/m ³
7439-98-7	molybdenum	30 mg/m ³
7440-28-0	Thallium from Thallium nitrate	0.06 mg/m ³
7439-95-4	magnesium	18 mg/m ³
7440-36-0	antimony	1.5 mg/m ³
7440-02-0	nickel	4.5 mg/m ³

· **PAC-2:**

7697-37-2	nitric acid	24 ppm
87-69-4	(+)-tartaric acid	17 mg/m ³
7439-96-5	manganese	5 mg/m ³
7440-32-6	titanium	330 mg/m ³
7439-92-1	Lead from Lead Oxide	120 mg/m ³
7440-50-8	copper	33 mg/m ³
7440-66-6	zinc powder -zinc dust (stabilized)	21 mg/m ³
7440-38-2	arsenic	17 mg/m ³
7439-89-6	iron	35 mg/m ³
7440-48-4	cobalt	2 mg/m ³
7440-47-3	chromium	17 mg/m ³
7440-24-6	strontium	330 mg/m ³
7440-41-7	beryllium	0.025 mg/m ³
7440-62-2	Vanadium from Ammonium trioxovanadate	5.8 mg/m ³
7439-93-2	Lithium from Lithium carbonate	36 mg/m ³
7782-49-2	selenium	6.6 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.76 mg/m ³
7439-98-7	molybdenum	330 mg/m ³
7440-28-0	Thallium from Thallium nitrate	3.3 mg/m ³
7439-95-4	magnesium	200 mg/m ³

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7440-36-0	antimony	13 mg/m ³
7440-02-0	nickel	50 mg/m ³
· PAC-3:		
7697-37-2	nitric acid	92 ppm
87-69-4	(+)-tartaric acid	100 mg/m ³
7439-96-5	manganese	1,800 mg/m ³
7440-32-6	titanium	2,000 mg/m ³
7439-92-1	Lead from Lead Oxide	700 mg/m ³
7440-50-8	copper	200 mg/m ³
7440-66-6	zinc powder -zinc dust (stabilized)	120 mg/m ³
7440-38-2	arsenic	100 mg/m ³
7439-89-6	iron	150 mg/m ³
7440-48-4	cobalt	20 mg/m ³
7440-47-3	chromium	99 mg/m ³
7440-24-6	strontium	2,000 mg/m ³
7440-41-7	beryllium	0.1 mg/m ³
7440-62-2	Vanadium from Ammonium trioxovanadate	35 mg/m ³
7439-93-2	Lithium from Lithium carbonate	220 mg/m ³
7782-49-2	selenium	40 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	4.7 mg/m ³
7439-98-7	molybdenum	2,000 mg/m ³
7440-28-0	Thallium from Thallium nitrate	20 mg/m ³
7439-95-4	magnesium	1,200 mg/m ³
7440-36-0	antimony	80 mg/m ³
7440-02-0	nickel	99 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:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

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

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.

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Avoid contact with the eyes and skin.

· **Respiratory protection:**

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: According to product specification

· **Odor:** Characteristic

· **Odour Threshold:** Not applicable.

· **pH-value:** Not applicable.

· **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 83 °C (181.4 °F)

· **Flash point:** Not applicable.

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

· **Decomposition temperature:** Not applicable.

· **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 (68 °F):** 23 hPa (17.3 mm Hg)

· **Density at 20 °C (68 °F)** 1.02796 g/cm³ (8.57833 lbs/gal)

· **Relative density** Not applicable.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix.

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

· **Viscosity:**

Dynamic: Not applicable.

Kinematic: Not applicable.

· **Solvent content:**

Water: 94.6 %

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VOC content:	0.00 %
Solids content:	0.3 %
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
7440-38-2	arsenic	I
7440-48-4	cobalt	2B
7440-47-3	chromium	3
7440-41-7	beryllium	I
7782-49-2	selenium	3
7440-43-9	cadmium (non-pyrophoric)	I
7440-02-0	nickel	2B

· NTP (National Toxicology Program)

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

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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 · ADR · IMDG, IATA	Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution, Hydrofluoric acid) 3264 Corrosive liquid, acidic, inorganic, n.o.s. (Nitric acid solution, Hydrofluoric acid) CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID SOLUTION, HYDROFLUORIC ACID)
· Transport hazard class(es) · DOT 	
· Class · Label	8 Corrosive substances 8
· ADR, IMDG, IATA 	
· Class · Label	8 Corrosive substances 8
· Packing group · DOT, ADR, IMDG, IATA	III
· Environmental hazards:	Not applicable.
· 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 II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR · Exempted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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- **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

15 Regulatory information

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

· Section 313 (Specific toxic chemical listings):

7697-37-2	nitric acid
7664-39-3	hydrofluoric acid
7439-96-5	manganese
7439-92-1	Lead from Lead Oxide
7440-50-8	copper
7440-66-6	zinc powder -zinc dust (stabilized)
7440-38-2	arsenic
7440-48-4	cobalt
7440-47-3	chromium
7440-41-7	beryllium
7440-62-2	Vanadium from Ammonium trioxovanadate
7439-93-2	Lithium from Lithium carbonate
7782-49-2	selenium
7440-43-9	cadmium (non-pyrophoric)
7440-28-0	Thallium from Thallium nitrate
7440-36-0	antimony
7440-02-0	nickel

· TSCA (Toxic Substances Control Act):

7697-37-2	nitric acid
87-69-4	(+)-tartaric acid
7439-96-5	manganese
7440-32-6	titanium
7439-92-1	Lead from Lead Oxide
7440-50-8	copper
7440-66-6	zinc powder -zinc dust (stabilized)
7440-38-2	arsenic
7439-89-6	iron
7440-48-4	cobalt
7440-47-3	chromium
7440-24-6	strontium
7440-41-7	beryllium
7440-62-2	Vanadium from Ammonium trioxovanadate
7439-93-2	Lithium from Lithium carbonate
7782-49-2	selenium
7440-43-9	cadmium (non-pyrophoric)
7440-70-2	calcium
7439-98-7	molybdenum
7440-28-0	Thallium from Thallium nitrate
7439-95-4	magnesium
7440-36-0	antimony
7440-02-0	nickel
7732-18-5	water, distilled, conductivity or of similar purity

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· Proposition 65**· Chemicals known to cause cancer:**

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

· 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:

7439-93-2	Lithium from Lithium carbonate
7440-43-9	cadmium (non-pyrophoric)

· Carcinogenic categories**· EPA (Environmental Protection Agency)**

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

· TLV (Threshold Limit Value established by ACGIH)

7439-92-1	Lead from Lead Oxide	A3
7440-38-2	arsenic	A1
7440-48-4	cobalt	A3
7440-43-9	cadmium (non-pyrophoric)	A2
7439-98-7	molybdenum	A3
7440-02-0	nickel	A5

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

7440-38-2	arsenic
7440-43-9	cadmium (non-pyrophoric)
7440-02-0	nickel

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

GHS05

· Signal word Danger**· Hazard-determining components of labeling:**

nitric acid

· Hazard statements

H314 Causes severe skin burns and eye damage.

· Precautionary statements

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.

Specific treatment (see on this label).

Store locked up.

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

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

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** product safety department

· **Contact:**

SPEX CertiPrep, LLC.

1-732-549-7144

· **Date of preparation / last revision** 08/10/2018 / -

· **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

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

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

US