1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name:** Custom Claritas Standard

· **Article number:** ZPURDIN-53-100
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the preparation** Certified Reference Material

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
SPEX CertiPrep, Inc - 203 Norcross Ave, Metuchen, NJ 08840

· **Information department:** product safety department
· **Emergency telephone number:**
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Hazards identification

· **Classification of the substance or mixture**

GHS08 Health hazard

H350 May cause cancer.

GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

H303 May be harmful if swallowed.
H313 May be harmful in contact with skin.
H333 May be harmful if inhaled.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Toxic
May cause cancer.

Corrosive
Causes burns.

Harmful
Harmful by inhalation, in contact with skin and if swallowed.
· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of international guidelines.

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

GHS05 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Beryllium from Beryllium Acetate
· **Hazard statements**
May be harmful if swallowed.
May be harmful in contact with skin.
May be harmful if inhaled.
Causes severe skin burns and eye damage.
May cause cancer.

(Contd. on page 2)

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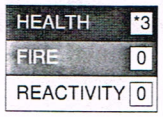
· **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not breathe dust/fume/gas/mist/vapours/spray.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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 or doctor/physician.
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.*
· **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	H272; H314	5.0%
7664-39-3	hydrofluoric acid	H301; H311; H331; H314	0.9%
7440-41-7	Beryllium from Beryllium Acetate	H300; H310; H330; H350	0.1%
7440-02-0	nickel	H351; H317	0.1%
7440-66-6	zinc powder -zinc dust (stabilized)	H400; H410	0.1%

· **Chemical identification of the substance/preparation**			
7429-90-5	aluminium		0.1%
7440-39-3	Barium from Barium carbonate	H302	0.1%
7440-70-2	Calcium from Calcium carbonate	H318; H315; H335	0.1%
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	H315; H319	0.1%
7439-89-6	iron	H300	0.1%
7440-09-7	Potassium from Potassium nitrate	H303	0.1%
7439-95-4	magnesium	H250; H260	0.1%
7439-96-5	manganese		0.1%
7440-23-5	Sodium from Sodium carbonate	H319	0.1%
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate		0.1%
7440-24-6	Strontium from Strontium carbonate		0.1%
7440-32-6	titanium	H251; H260	0.1%
7732-18-5	water, distilled, conductivity or of similar purity		92.6%

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:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.

(Contd. on page 3)

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· **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:**
Immediately call a doctor.
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 Firefighting measures

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

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
· **Methods and material for containment and cleaning up:**
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.
Open and handle receptacle with care.
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	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

(Contd. on page 4)

(Contd. of page 3)

7664-39-3 hydrofluoric acid	
PEL	3 ppm as F
REL	Short-term value: C 5* mg/m³, C 6* ppm Long-term value: 2.5 mg/m³, 3 ppm *15-min, as F
TLV	Short-term value: C 1.64 mg/m³, C 2 ppm Long-term value: 0.41 mg/m³, 0.5 ppm as F; Skin
7440-41-7 Beryllium from Beryllium Acetate	
PEL	Short-term value: C 0.005; 0.025* mg/m³ Long-term value: 0.002 mg/m³ as Be; *30 min peak per 8-hr shift
REL	Short-term value: C 0.0005 mg/m³ as Be; See Pocket Guide App. A
TLV	0.00005* mg/m³ as Be; SEN; Skin; *as inhalable fraction
7440-02-0 nickel	
PEL	1 mg/m³
REL	0.015 mg/m³ as Ni; See Pocket Guide App. A
TLV	1.5* 0.2** 0.1*** mg/m³ inhal.fraction;*elemental;**insol.,***sol.compds.

· **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.
Store protective clothing separately.
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:	Fluid
Color:	According to product specification
· **Odor:**	Characteristic

(Contd. on page 5)

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(Contd. of page 4)

· Odour threshold:	Not determined.
· pH-value:	Not determined.
· Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	83°C
· Flash point:	Not applicable.
· Flammability (solid, gaseous):	Not applicable.
· Ignition temperature:	
Decomposition temperature:	Not determined.
· Auto igniting:	Product is not selfigniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Explosion limits:	
Lower:	Not determined.
Upper:	Not determined.
· Vapor pressure at 20°C:	23 hPa
· Density:	Not determined.
· Relative density	Not determined.
· Vapour density	Not determined.
· Evaporation rate	Not determined.
· Solubility in / Miscibility with	
Water:	Not miscible or difficult to mix.
· Segregation coefficient (n-octonol/water):	Not determined.
· Viscosity:	
Dynamic:	Not determined.
Kinematic:	Not determined.
· Solvent content:	
Organic solvents:	0.0 %
Water:	92.6 %
Solids content:	1.5 %
· Other information	No further relevant information available.

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
7664-39-3 hydrofluoric acid		
Oral	LD50	1276 mg/kg (rat)

· **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:
Harmful
Corrosive
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

(Contd. on page 6)

(Contd. of page 5)

Carcinogenic.

12 Ecological information

· **Toxicity**
· **Acquatic 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:** 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:** 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, IMDG, IATA** · **ADR**	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID) 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· **Transport hazard class(es)** · **DOT, IMDG, IATA**  · **Class** · **Label**	 8 Corrosive substances. 8
· **ADR**  · **Class** · **Label**	 8 Corrosive substances 8
· **Packing group** · **DOT, ADR, IMDG, IATA**	III
· **Special precautions for user** · **Danger code (Kemler):** · **EMS Number:** · **Segregation groups**	Warning: Corrosive substances 80 F-A,S-B Acids
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID), 8, III

(Contd. on page 7)

(Contd. of page 6)

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
7439-96-5	manganese
7440-02-0	nickel

· **TSCA (Toxic Substances Control Act):**	
7697-37-2	nitric acid
7664-39-3	hydrofluoric acid
7429-90-5	aluminium
7440-39-3	Barium from Barium carbonate
7440-70-2	Calcium from Calcium carbonate
7439-89-6	iron
7440-09-7	Potassium from Potassium nitrate
7439-95-4	magnesium
7439-96-5	manganese
7440-23-5	Sodium from Sodium carbonate
7440-02-0	nickel
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate
7440-24-6	Strontium from Strontium carbonate
7440-32-6	titanium
7732-18-5	water, distilled, conductivity or of similar purity

· **Proposition 65**

· **Chemicals known to cause cancer:**	
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:**
None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**
None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**		
7440-39-3	Barium from Barium carbonate	CBD
7439-96-5	manganese	D
7440-66-6	zinc powder -zinc dust (stabilized)	II

· **IARC (International Agency for Research on Cancer)**		
7440-02-0	nickel	2B

· **NTP (National Toxicology Program)**		
7440-02-0	nickel	R

· **TLV (Threshold Limit Value established by ACGIH)**		
7429-90-5	aluminium	A4
7440-39-3	Barium from Barium carbonate	A4
7440-02-0	nickel	A5

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**	
7440-02-0	nickel

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

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

(Contd. on page 8)

(Contd. of page 7)

· **Hazard pictograms**

GHS05 GHS08

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Beryllium from Beryllium Acetate
· **Hazard statements**
May be harmful if swallowed.
May be harmful in contact with skin.
May be harmful if inhaled.
Causes severe skin burns and eye damage.
May cause cancer.
· **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/vapours/spray.
IF ON SKIN (or hair): Remove/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 or doctor/physician.
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

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.

· **Relevant phrases**
H272 May intensify fire; oxidizer.
H300 Fatal if swallowed.
H301 Toxic if swallowed.
H310 Fatal in contact with skin.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H330 Fatal if inhaled.
H331 Toxic if inhaled.
H350 May cause cancer.
H351 Suspected of causing cancer.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

· **Department issuing MSDS:** product safety department
· **Contact:**
SPEX CertiPrep Inc.
732-549-7144