

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

1 Identification of substance

- Product details
- Trade name: Custom Claritas Standard
- Article number: ZPURDIN-50-100
- Application of the substance / the preparation Certified Reference Material
- Manufacturer/Supplier:
SPEX CertiPrep
203 Norcross Avenue
Metuchen, NJ 08840
USA
- Information department: product safety department
- Emergency information:
Emergency Phone Number (24 hours)
CHEMTREC (800-424-9300)
Outside US: 703-527-3887

2 Composition/Data on components

- Chemical characterization
- Description: Mixture of the substances listed below with nonhazardous additions.

Dangerous components:

7697-37-2	nitric acid	Danger: 3.2/1A	10.0%
7440-38-2	arsenic	Danger: 3.1.O/3, 3.1.I/3 Warning: 4.1.C/1	0.1%
7440-41-7	Beryllium from Beryllium Acetate	Danger: 3.1.O/2, 3.1.D/2, 3.1.I/2; 3.6/1A	0.1%
7440-43-9	cadmium (non-pyrophoric)	Danger: 3.1.I/2; 3.6/1B, 3.9/1, 3.5/2, 3.7/2 Warning: 4.1.C/1	0.1%
7440-02-0	nickel	Warning: 3.6/2; 3.4.S/1	0.1%
7439-92-1	Lead from Lead Oxide	Danger: 3.7/1A, 3.9/2 Warning: 4.1.C/1; 3.1.O/4, 3.1.I/4	0.1%
7440-62-2	Vanadium from Ammonium trioxovanadate	Danger: 3.1.O/3, 3.2/2, 3.3/2A, 3.8/3	0.1%
7440-66-6	zinc powder -zinc dust (stabilized)	Warning: 4.1.C/1	0.1%

Chemical identification of the substance/preparation

7732-18-5	water, distilled, conductivity or of similar purity		87.4%
7440-22-4	silver		0.1%
7429-90-5	aluminium		0.1%
7440-39-3	Barium from Barium carbonate	Warning: 3.1.O/4	0.1%
7440-69-9	bismuth		0.1%
7440-70-2	Calcium from Calcium carbonate	Danger: 3.3/1, 3.2/2 Warning: 3.8/3	0.1%
7440-48-4	cobalt	Danger: 3.4.R/1, 3.4.S/1 4.1.C/4	0.1%
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	Warning: 3.2/2, 3.3/2A	0.1%
7440-50-8	copper		0.1%
7439-89-6	iron		0.1%
7440-09-7	Potassium from Potassium nitrate		0.1%
7439-91-0	Lanthanum from Lanthanum(III) nitrate hexahydrate	Warning: 3.2/2, 3.3/2A, 3.8/3	0.1%
7439-95-4	magnesium	Danger: 2.10/1, 2.12/1	0.1%
7439-96-5	manganese		0.1%
7439-98-7	molybdenum		0.1%
7440-23-5	Sodium from Sodium carbonate	Warning: 3.3/2A	0.1%
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate		0.1%
7440-20-2	Scandium from Scandium oxide		0.1%
7440-24-6	Strontium from Strontium carbonate		0.1%
7440-65-5	Yttrium from Yttrium oxide		0.1%

USA

(Contd. on page 2)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

Trade name: Custom Claritas Standard

(Contd. of page 1)

3 Hazards identification

Hazard description:



Toxic

Information pertaining to particular dangers for man and environment:

The product has to be labelled due to the calculation procedure of international guidelines.

May cause cancer.

Also harmful by inhalation, in contact with skin and if swallowed.

Causes severe burns.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Classification system:

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

NFPA ratings (scale 0 - 4)

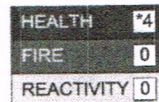


Health = 4

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)



Health = 4

Fire = 0

Reactivity = 0

GHS label elements



Danger

3.6/1A - May cause cancer.



Danger

3.2/1B - Causes severe skin burns and eye damage.



Warning

3.1/4 - Harmful if swallowed.

3.1/4 - Harmful if inhaled.

4.1/3 - Harmful to aquatic life with long lasting effects.

Prevention:

Do not breathe dust/fume/gas/mist/vapours/spray.

Response:

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.

Storage:

Store locked up.

Disposal:

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

4 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.

After skin contact:

Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 3)

USA

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

Trade name: Custom Claritas Standard

(Contd. of page 2)

- **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.

5 Fire fighting measures

- **Suitable extinguishing agents:** CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:**
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.
Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
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.

7 Handling and storage

- **Handling:**
- **Information 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.
- **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.

8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:**

7697-37-2 nitric acid

PEL	5 mg/m ³ , 2 ppm
REL	Short-term value: 10 mg/m ³ , 4 ppm
	Long-term value: 5 mg/m ³ , 2 ppm
TLV	Short-term value: 10 mg/m ³ , 4 ppm
	Long-term value: 5.2 mg/m ³ , 2 ppm

7440-38-2 arsenic

PEL	0.5* 0.01** mg/m ³
	as As; *organic**inorganic compounds
REL	Short-term value: 0.002 mg/m ³
	as As; 15min
TLV	0.01 mg/m ³
	as As; BEI

7440-43-9 cadmium (non-pyrophoric)

PEL	0.005 mg/m ³
	Table Z-2 for exclusions in 29 CFR 1910.1027
REL	as Cd; LFC (LOQ 0.1 mg/m ³)
TLV	0.01 mg/m ³
	0.002 R; as Cd; BEI

(Contd. on page 4)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

Trade name: Custom Claritas Standard

(Contd. of page 3)

7440-02-0 nickel

PEL 1 mg/m³
REL 0.015 mg/m³
Elemental
TLV 1.5* mg/m³
elemental; *as inhalable fraction

7439-92-1 Lead from Lead Oxide

PEL 0.05 mg/m³
as Pb; See 29 CFR 1910.1025
REL 0.05* mg/m³
as Pb; *8-hr TWA, Blood Pb<0.06mg/100g whole blood
TLV 0.05 mg/m³
as Pb; BEI

• **Additional information:** The lists that were valid during the creation were used as basis.

• **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• **General Information**

Form: Fluid
Color: According to product specification
Odor: Characteristic

• **Change in condition**

Melting point/Melting range: Undetermined.

Boiling point/Boiling range: 83°C (181°F)

• **Flash point:** Not applicable.

• **Auto igniting:** Product is not selfigniting.

• **Danger of explosion:** Product does not present an explosion hazard.

• **Vapor pressure at 20°C (68°F):** 23 hPa (17 mm Hg)

• **Density:** Not determined.

• **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix.

(Contd. on page 5)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

Trade name: Custom Claritas Standard

(Contd. of page 4)

· Solvent content:	
Organic solvents:	0.0 %
Water:	87.4 %
· Solids content:	
	2.5 %

10 Stability and reactivity

- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Dangerous reactions: No dangerous reactions known.
- Dangerous products of decomposition: No dangerous decomposition products known.

11 Toxicological information

· Acute toxicity:

· LD/LC50 values that are relevant for classification:

7440-43-9 cadmium (non-pyrophoric)

Oral LD50 225 mg/kg (rat)

7440-62-2 Vanadium from Ammonium trioxovanadate

Oral LD50 160 mg/kg (rat)

· Primary irritant effect:

· on the skin: Strong 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.

Carcinogenic.

12 Ecological information

· Ecotoxicological effects:

· Remark: Harmful to fish

· General notes:

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Must not reach bodies of water or drainage ditch undiluted or unneutralized.

Danger to drinking water if even extremely small quantities leak into the ground.

Harmful to aquatic organisms

13 Disposal considerations

· Product:

· 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

· DOT regulations:



- Hazard class: 8
- Identification number: UN3264
- Packing group: III

(Contd. on page 6)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

Trade name: Custom Claritas Standard

(Contd. of page 5)

· Proper shipping name (technical name): CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)
· Label 8

· Land transport ADR/RID (cross-border):



· ADR/RID class: 8 Corrosive substances
· Danger code (Kemler): 80
· UN-Number: 3264
· Packaging group: III
· Label: 8
· Description of goods: 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

· Maritime transport IMDG:



· IMDG Class: 8
· UN Number: 3264
· Label: 8
· Packaging group: III
· EMS Number: F-A,S-B
· Marine pollutant: No
· Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

· Air transport ICAO-TI and IATA-DGR:



· ICAO/IATA Class: 8
· UN/ID Number: 3264
· Label: 8
· Packaging group: III
· Proper shipping name: CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID)

· UN "Model Regulation": UN3264, CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S., 8, III

15 Regulations

· Sara

· Section 355 (extremely hazardous substances):

7697-37-2 nitric acid

· Section 313 (Specific toxic chemical listings):

7697-37-2 nitric acid

7440-22-4 silver

7429-90-5 aluminium

7440-38-2 arsenic

7440-43-9 cadmium (non-pyrophoric)

7440-48-4 cobalt

7440-50-8 copper

7439-96-5 manganese

7440-02-0 nickel

7440-62-2 Vanadium from Ammonium trioxovanadate

· TSCA (Toxic Substances Control Act):

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

7697-37-2 nitric acid

7440-22-4 silver

7429-90-5 aluminium

(Contd. on page 7)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

Trade name: Custom Claritas Standard

(Contd. of page 6)

7440-38-2	arsenic	
7440-39-3	Barium from Barium carbonate	
7440-69-9	bismuth	
7440-70-2	Calcium from Calcium carbonate	
7440-43-9	cadmium (non-pyrophoric)	
7440-48-4	cobalt	
7440-50-8	copper	
7439-89-6	iron	
7440-09-7	Potassium from Potassium nitrate	
7439-95-4	magnesium	
7439-96-5	manganese	
• Proposition 65		
• Chemicals known to cause cancer:		
7440-43-9	cadmium (non-pyrophoric)	
7440-48-4	cobalt	
7440-02-0	nickel	
7439-92-1	Lead from Lead Oxide	
• 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)	
• Chemicals known to cause developmental toxicity:		
7440-43-9	cadmium (non-pyrophoric)	
• Carcinogenic categories		
• EPA (Environmental Protection Agency)		
7440-22-4	silver	D
7440-38-2	arsenic	A
7440-39-3	Barium from Barium carbonate	CBD
7440-43-9	cadmium (non-pyrophoric)	B1
7440-50-8	copper	D
7439-96-5	manganese	D
7439-92-1	Lead from Lead Oxide	B2
7440-66-6	zinc powder -zinc dust (stabilized)	II
• IARC (International Agency for Research on Cancer)		
7440-38-2	arsenic	I
7440-43-9	cadmium (non-pyrophoric)	I
7440-48-4	cobalt	2B, 2A
7440-02-0	nickel	2B
7439-92-1	Lead from Lead Oxide	2A
• NTP (National Toxicology Program)		
7440-38-2	arsenic	K
7440-43-9	cadmium (non-pyrophoric)	K
7440-02-0	nickel	R
7439-92-1	Lead from Lead Oxide	R
• TLV (Threshold Limit Value established by ACGIH)		
7429-90-5	aluminium	A4
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
7439-98-7	molybdenum	A3
7440-02-0	nickel	A5
7439-92-1	Lead from Lead Oxide	A3
• NIOSH-Ca (National Institute for Occupational Safety and Health)		
7440-38-2	arsenic	

(Contd. on page 8)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 05/10/2010

Reviewed on 05/10/2010

Trade name: Custom Claritas Standard

(Contd. of page 7)

7440-43-9	cadmium (non-pyrophoric)
7440-02-0	nickel
· OSHA-Ca (Occupational Safety & Health Administration)	
7440-38-2	arsenic
7440-43-9	cadmium (non-pyrophoric)

· **Product related hazard informations:** The product has been classified and marked in accordance with directives on hazardous materials.

· **Hazard symbols:**



Toxic

· **Hazard-determining components of labelling:**

Beryllium from Beryllium Acetate
cadmium (non-pyrophoric)
Vanadium from Ammonium trioxovanadate
nitric acid

· **Risk phrases:**

May cause cancer.
Also harmful by inhalation, in contact with skin and if swallowed.
Causes severe burns.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Safety phrases:**

Avoid exposure - obtain special instructions before use.
Keep locked up and out of the reach of children.
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Do not empty into drains, dispose of this material and its container at hazardous or special waste collection point.
Wear suitable protective clothing, gloves and eye/face protection.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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 MSDS:** product safety department

· **Contact:**

SPEX CertiPrep Inc.
732-549-7144

· **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)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

USA