

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

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

- **Product identifier**
- **Trade name:** Initial Calibration Verification Std. III
- **Article number:** ICV-3
- **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**



GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

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



Corrosive

Causes burns.

- **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of international guidelines.
- **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

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



GHS05

- **Signal word** Danger
- **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/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

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

Trade name: Initial Calibration Verification Std. III

(Contd. of page 1)

· HMIS-ratings (scale 0 - 4)

HEALTH	3	Health = 3
FIRE	0	Fire = 0
REACTIVITY	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%
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· Chemical identification of the substance/preparation

7440-70-2	Calcium from Calcium carbonate	⚠ H318; ⚠ H315; H335	0.05%
7440-09-7	Potassium from Potassium nitrate	H303	0.05%
7440-23-5	Sodium from Sodium carbonate	⚠ H319	0.05%
7439-95-4	magnesium	⚠ H250; H260	0.05%
7429-90-5	aluminium		0.02%
7440-39-3	Barium from Barium carbonate	⚠ H302	0.02%
7782-49-2	selenium	⚠ H301; H331; ⚠ H373; H413	0.01%
7439-89-6	iron	⚠ H300	0.01%
7440-38-2	arsenic	⚠ H301; H331; ⚠ H400; H410	0.01%
7440-28-0	Thallium from Thallium nitrate	⚠ H300; H330; ⚠ H373; ⚠ H411	0.01%
7439-92-1	Lead from Lead Oxide	⚠ H360; H373; ⚠ H400; H410; ⚠ H302; H332	0.01%
7440-62-2	Vanadium from Ammonium trioxovanadate	⚠ H301; ⚠ H315; H319; H335	0.005%
7440-48-4	cobalt	⚠ H334; ⚠ H317; H413	0.005%
7439-96-5	manganese		0.005%
7440-43-9	cadmium (non-pyrophoric)	⚠ H330; ⚠ H341; H350; H361; H372; ⚠ H400; H410	0.005%
7440-02-0	nickel	⚠ H351; ⚠ H317	0.005%
7440-66-6	zinc powder -zinc dust (stabilized)	⚠ H400; H410	0.005%
7440-22-4	silver		0.003%
7440-50-8	copper		0.003%
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	⚠ H315; H319	0.002%
7440-41-7	Beryllium from Beryllium Acetate	⚠ H300; H310; H330; ⚠ H350	0.001%
7732-18-5	water, distilled, conductivity or of similar purity		94.673%

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 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.

(Contd. on page 3)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

Trade name: Initial Calibration Verification Std. III

(Contd. of page 2)

- **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.
- **Control parameters**

· **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

- **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

(Contd. on page 4)

USA

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

Trade name: Initial Calibration Verification Std. III

(Contd. of page 3)

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
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 at 20°C: 1.03283 g/cm³

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-octanol/water): Not determined.

Viscosity:

Dynamic:	Not determined.
Kinematic:	Not determined.

Solvent content:

Organic solvents:	0.0 %
Water:	94.7 %

Solids content: 0.3 %

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.

(Contd. on page 5)

Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

Trade name: Initial Calibration Verification Std. III

(Contd. of page 4)

· **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.


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 | UN3264 |
| · DOT, ADR, IMDG, IATA | |
| · UN proper shipping name | CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID) |
| · DOT, IMDG, IATA | 3264 CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (NITRIC ACID) |
| · ADR | |
| · Transport hazard class(es) | |
| · DOT, IMDG, IATA | |
|  | |
| · Class | 8 Corrosive substances. |
| · Label | 8 |

(Contd. on page 6)

USA


Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

Trade name: Initial Calibration Verification Std. III

(Contd. of page 5)

· ADR	
	
· Class	8 Corrosive substances
· Label	8
· Packing group	
· DOT, ADR, IMDG, IATA	III
· 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
· 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

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

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

7697-37-2 nitric acid

7429-90-5 aluminium

7782-49-2 selenium

7440-38-2 arsenic

7440-28-0 Thallium from Thallium nitrate

7440-62-2 Vanadium from Ammonium trioxovanadate

7440-48-4 cobalt

7439-96-5 manganese

7440-43-9 cadmium (non-pyrophoric)

7440-02-0 nickel

7440-22-4 silver

7440-50-8 copper

· **TSCA (Toxic Substances Control Act):**

7697-37-2 nitric acid

7440-70-2 Calcium from Calcium carbonate

7440-09-7 Potassium from Potassium nitrate

7440-23-5 Sodium from Sodium carbonate

7439-95-4 magnesium

7429-90-5 aluminium

7440-39-3 Barium from Barium carbonate

7782-49-2 selenium

7439-89-6 iron

7440-38-2 arsenic

7440-28-0 Thallium from Thallium nitrate

7439-92-1 Lead from Lead Oxide

7440-62-2 Vanadium from Ammonium trioxovanadate

7440-48-4 cobalt

7439-96-5 manganese

(Contd. on page 7)

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

Trade name: Initial Calibration Verification Std. III

(Contd. of page 6)

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

7439-92-1	Lead from Lead Oxide
7440-48-4	cobalt
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:**

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

7440-39-3	Barium from Barium carbonate	CBD
7782-49-2	selenium	D
7440-38-2	arsenic	A
7439-92-1	Lead from Lead Oxide	B2
7439-96-5	manganese	D
7440-43-9	cadmium (non-pyrophoric)	B1
7440-66-6	zinc powder -zinc dust (stabilized)	II
7440-22-4	silver	D
7440-50-8	copper	D

· **IARC (International Agency for Research on Cancer)**

7782-49-2	selenium	3
7440-38-2	arsenic	I
7439-92-1	Lead from Lead Oxide	2A
7440-48-4	cobalt	2B, 2A
7440-43-9	cadmium (non-pyrophoric)	I
7440-02-0	nickel	2B

· **NTP (National Toxicology Program)**

7782-49-2	selenium	R
7440-38-2	arsenic	K
7439-92-1	Lead from Lead Oxide	R
7440-43-9	cadmium (non-pyrophoric)	K
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
7440-38-2	arsenic	A1
7439-92-1	Lead from Lead Oxide	A3
7440-48-4	cobalt	A3
7440-43-9	cadmium (non-pyrophoric)	A2
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

· **OSHA-Ca (Occupational Safety & Health Administration)**

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

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

(Contd. on page 8)

-USA-

Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 08/02/2011

Reviewed on 08/02/2011

Trade name: Initial Calibration Verification Std. III

(Contd. of page 7)

· **Hazard pictograms**

GHS05

· **Signal word** *Danger*· **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/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.**H314 Causes severe skin burns and eye damage.*· **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**IATA: International Air Transport Association**ICAO: International Civil Aviation Organization**ACGIH: American Conference of Governmental Industrial Hygienists**NFPA: National Fire Protection Association (USA)**HMIS: Hazardous Materials Identification System (USA)*

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