

1 Identification

- **Product identifier**
- **Product Name:** 21-ELEMENT OIL STANDARD
- **Part Number:**
S21-500Y
S21-500Z
- **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** *The product is not classified according to the Globally Harmonized System (GHS).*
- **Label elements**
- **GHS label elements** *Not Regulated*
- **Hazard pictograms** *Not Regulated*
- **Signal word** *Not Regulated*
- **Hazard statements** *Not Regulated*
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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

HEALTH	0	Health = 0
FIRE	1	Fire = 1
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:** *Not Regulated*

Chemical identification of the substance/preparation

64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic	98.95%
7439-89-6	iron	0.05%
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate	0.05%
7440-21-3	alkali fluorosilicates (NH ₄)	0.05%
7440-62-2	Vanadium from Ammonium trioxovanadate	0.05%
7429-90-5	aluminium	0.05%
7440-42-8	Boron from Ammonium tetraborate tetrahydrate	0.05%
7440-43-9	cadmium (non-pyrophoric)	0.05%
7440-50-8	copper	0.05%
7439-96-5	manganese	0.05%
7440-66-6	zinc powder -zinc dust (pyrophoric)	0.05%
7440-02-0	nickel	0.05%
7439-92-1	Lead from Lead Oxide	0.05%

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 10/27/2016

Reviewed on 10/27/2016

Product Name: 21-ELEMENT OIL STANDARD

(Contd. of page 1)

7440-32-6	titanium	0.05%
7439-95-4	magnesium	0.05%
7439-98-7	molybdenum	0.05%
7440-31-5	tin	0.05%
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	0.05%
7440-23-5	Sodium from Sodium carbonate	0.05%
7440-22-4	silver	0.05%
7440-39-3	Barium from Barium carbonate	0.05%
7440-70-2	Calcium from Calcium carbonate	0.05%

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:**
Supply fresh air and to be sure call for a doctor.
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.
- **After swallowing:** If symptoms persist consult 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:** 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.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **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).
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**
No special measures required.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Follow good laboratory practices.
- **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:** None.
- **Specific end use(s)** No further relevant information available.

(Contd. on page 3)

US

Product Name: 21-ELEMENT OIL STANDARD

(Contd. of page 2)

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:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Immediately remove all soiled and contaminated clothing.
- **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:** Goggles recommended during refilling.

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: 315 °C (599 °F)
- **Flash point:** 233 °C (451 °F)
- **Flammability (solid, gaseous):** Not applicable.
- **Ignition temperature:**
 - 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:** Not determined.
- **Density**
- **Relative density**
- **Vapor density**
- **Evaporation rate**
- **Solubility in / Miscibility with Water:** Not miscible or difficult to mix.

(Contd. on page 4)

Safety Data Sheet
acc. to OSHA HCS

Printing date 10/27/2016

Reviewed on 10/27/2016

Product Name: 21-ELEMENT OIL STANDARD

(Contd. of page 3)

- **Partition coefficient (n-octanol/water):** Not applicable.
- **Viscosity:**
 - Dynamic:** Not applicable.
 - Kinematic:** Not applicable.
- **Solvent content:**
 - Organic solvents:** 0.0 %
- **Solids content:** 1.0 %
- **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:**

- **LD/LC50 values that are relevant for classification:**

7440-62-2 Vanadium from Ammonium trioxovanadate

Oral | LD50 | 160 mg/kg (rat)

7440-43-9 cadmium (non-pyrophoric)

Oral | LD50 | 225 mg/kg (rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:

The product is not subject to classification according to internally approved calculation methods for preparations:

When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

Irritant

- **Carcinogenic categories**

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

7440-43-9	cadmium (non-pyrophoric)	1
7440-02-0	nickel	2B
7439-92-1	Lead from Lead Oxide	2B
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	3

- **NTP (National Toxicology Program)**

7440-43-9	cadmium (non-pyrophoric)	K
7440-02-0	nickel	R
7439-92-1	Lead from Lead Oxide	R

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

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.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 10/27/2016

Reviewed on 10/27/2016

Product Name: 21-ELEMENT OIL STANDARD

(Contd. of page 4)

- **Additional ecological information:**
- **General notes:**
Water hazard class 1 (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **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:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number	
· DOT, ADR, IMDG, IATA	Not Regulated
· UN proper shipping name	
· DOT, ADR, IMDG, IATA	Not Regulated
· Transport hazard class(es)	
· DOT, ADR, IMDG, IATA	
· Class	Not Regulated
· Packing group	
· DOT, ADR, IMDG, IATA	Not Regulated
· Environmental hazards:	Not applicable.
· Special precautions for user	Not applicable.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· UN "Model Regulation":	Not Regulated

15 Regulatory information

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

· Section 355 (extremely hazardous substances):	
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate
· Section 313 (Specific toxic chemical listings):	
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate
7440-62-2	Vanadium from Ammonium trioxovanadate
7429-90-5	aluminium
7440-43-9	cadmium (non-pyrophoric)
7440-50-8	copper
7439-96-5	manganese
7440-66-6	zinc powder -zinc dust (pyrophoric)
7440-02-0	nickel
7439-92-1	Lead from Lead Oxide
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate
7440-22-4	silver
7440-39-3	Barium from Barium carbonate
· TSCA (Toxic Substances Control Act):	
64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic
7439-89-6	iron
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 10/27/2016

Reviewed on 10/27/2016

Product Name: 21-ELEMENT OIL STANDARD

(Contd. of page 5)

7440-21-3	alkali fluorosilicates (NH ₄)
7440-62-2	Vanadium from Ammonium trioxovanadate
7429-90-5	aluminium
7440-42-8	Boron from Ammonium tetraborate tetrahydrate
7440-43-9	cadmium (non-pyrophoric)
7440-50-8	copper
7439-96-5	manganese
7440-02-0	nickel
7439-92-1	Lead from Lead Oxide
7440-32-6	titanium
7439-95-4	magnesium
7439-98-7	molybdenum
7440-31-5	tin
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate
7440-23-5	Sodium from Sodium carbonate
7440-22-4	silver
7440-39-3	Barium from Barium carbonate
7440-70-2	Calcium from Calcium carbonate

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

7440-43-9	cadmium (non-pyrophoric)
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)**

7440-42-8	Boron from Ammonium tetraborate tetrahydrate	I (oral)
7440-43-9	cadmium (non-pyrophoric)	B1
7440-50-8	copper	D
7439-96-5	manganese	D
7440-66-6	zinc powder -zinc dust (pyrophoric)	II
7439-92-1	Lead from Lead Oxide	B2
7440-22-4	silver	D
7440-39-3	Barium from Barium carbonate	D, CBD(inh), NL(oral)

· TLV (Threshold Limit Value established by ACGIH)

7429-90-5	aluminium	A4
7440-43-9	cadmium (non-pyrophoric)	A2
7440-02-0	nickel	A5
7439-92-1	Lead from Lead Oxide	A3
7439-98-7	molybdenum	A3
7440-39-3	Barium from Barium carbonate	A4

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

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

· Protective Action Criteria for Chemicals**· PAC-1:**

64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic	140 mg/m ³
7439-89-6	iron	3.2 mg/m ³
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate	0.27 mg/m ³
7440-21-3	alkali fluorosilicates (NH ₄)	45 mg/m ³

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 10/27/2016

Reviewed on 10/27/2016

Product Name: 21-ELEMENT OIL STANDARD

(Contd. of page 6)

7440-62-2	Vanadium from Ammonium trioxovanadate	3 mg/m ³
7440-42-8	Boron from Ammonium tetraborate tetrahydrate	1.9 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.10 mg/m ³
7440-50-8	copper	3 mg/m ³
7439-96-5	manganese	3 mg/m ³
7440-02-0	nickel	4.5 mg/m ³
7439-92-1	Lead from Lead Oxide	0.15 mg/m ³
7440-32-6	titanium	30 mg/m ³
7439-95-4	magnesium	18 mg/m ³
7439-98-7	molybdenum	30 mg/m ³
7440-31-5	tin	6 mg/m ³
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	1.5 mg/m ³
7440-23-5	Sodium from Sodium carbonate	13 mg/m ³
7440-22-4	silver	0.3 mg/m ³
7440-39-3	Barium from Barium carbonate	1.5 mg/m ³

· PAC-2:

64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic	1,500 mg/m ³
7439-89-6	iron	35 mg/m ³
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate	3 mg/m ³
7440-21-3	alkali fluorosilicates (NH ₄)	100 mg/m ³
7440-62-2	Vanadium from Ammonium trioxovanadate	5.8 mg/m ³
7440-42-8	Boron from Ammonium tetraborate tetrahydrate	21 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.76 mg/m ³
7440-50-8	copper	33 mg/m ³
7439-96-5	manganese	5 mg/m ³
7440-02-0	nickel	50 mg/m ³
7439-92-1	Lead from Lead Oxide	120 mg/m ³
7440-32-6	titanium	330 mg/m ³
7439-95-4	magnesium	200 mg/m ³
7439-98-7	molybdenum	330 mg/m ³
7440-31-5	tin	67 mg/m ³
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	17 mg/m ³
7440-23-5	Sodium from Sodium carbonate	140 mg/m ³
7440-22-4	silver	170 mg/m ³
7440-39-3	Barium from Barium carbonate	180 mg/m ³

· PAC-3:

64742-65-0	Distillates (petroleum), solvent-dewaxed heavy paraffinic	8,900 mg/m ³
7439-89-6	iron	150 mg/m ³
7723-14-0	Phosphorus from Ammonium dihydrogenorthophosphate	18 mg/m ³
7440-21-3	alkali fluorosilicates (NH ₄)	630 mg/m ³
7440-62-2	Vanadium from Ammonium trioxovanadate	35 mg/m ³
7440-42-8	Boron from Ammonium tetraborate tetrahydrate	130 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	4.7 mg/m ³
7440-50-8	copper	200 mg/m ³
7439-96-5	manganese	1,800 mg/m ³
7440-02-0	nickel	99 mg/m ³
7439-92-1	Lead from Lead Oxide	700 mg/m ³
7440-32-6	titanium	2,000 mg/m ³
7439-95-4	magnesium	1,200 mg/m ³
7439-98-7	molybdenum	2,000 mg/m ³
7440-31-5	tin	400 mg/m ³
7440-47-3	Chromium from Chromium(III) nitrate nonahydrate	99 mg/m ³
7440-23-5	Sodium from Sodium carbonate	870 mg/m ³
7440-22-4	silver	990 mg/m ³
7440-39-3	Barium from Barium carbonate	1,100 mg/m ³

· GHS label elements Not Regulated

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 10/27/2016

Reviewed on 10/27/2016

Product Name: 21-ELEMENT OIL STANDARD

(Contd. of page 7)

- **Hazard pictograms** Not Regulated
- **Signal word** Not Regulated
- **Hazard statements** Not Regulated
- **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** 10/27/2016 / -

- **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)

LCS0: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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

US