

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/10/2019

Reviewed on 01/10/2019

1 Identification

- **Product identifier**
- **Product Name:** Low-level trace metals on cellulose ester filter paper
- **Part Number:** CFM-SPIKE-1
- **Application of the substance / the mixture** Use according to manufacturer's directions.
- **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**



GHS02 Flame

Flam. Sol. 1 H228 Flammable solid.

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



GHS02

- **Signal word** Danger
- **Hazard statements**
H228 Flammable solid.
- **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of fire: Use for extinction: CO2, powder or water spray.
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 3

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



HEALTH 0 Health = 0
FIRE 0 Fire = 0
REACTIVITY 3 Reactivity = 3

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

US

(Contd. on page 2)

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/10/2019

Reviewed on 01/10/2019

Product Name: Low-level trace metals on cellulose ester filter paper

(Contd. of page 1)

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

9004-70-0	Cellulose nitrate	80-90%
9004-35-7	Cellulose Acetate	0-10%
7440-38-2	arsenic	0.03%
7440-48-4	cobalt	0.006%
7440-50-8	copper	0.006%
7439-89-6	iron	0.006%
7439-92-1	lead	0.006%
7440-02-0	nickel	0.006%
7440-28-0	thallium	0.006%
7440-62-2	vanadium	0.006%
7440-66-6	zinc powder -zinc dust (stabilized)	0.006%
7440-39-3	barium	0.006%
7440-47-3	chromium	0.006%
7440-22-4	silver	0.003%
7440-41-7	beryllium	0.003%
7439-96-5	manganese	0.003%
7440-43-9	cadmium (non-pyrophoric)	0.003%

4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately rinse with water.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** 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 water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **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**
Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** 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:

7440-38-2	arsenic	1.5 mg/m ³
7440-48-4	cobalt	0.18 mg/m ³
7440-50-8	copper	3 mg/m ³

(Contd. on page 3)

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/10/2019

Reviewed on 01/10/2019

Product Name: Low-level trace metals on cellulose ester filter paper

(Contd. of page 2)

7439-89-6	iron	3.2 mg/m ³
7440-02-0	nickel	4.5 mg/m ³
7440-66-6	zinc powder -zinc dust (stabilized)	6 mg/m ³
7440-22-4	silver	0.3 mg/m ³
7439-96-5	manganese	3 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.10 mg/m ³
· PAC-2:		
7440-38-2	arsenic	17 mg/m ³
7440-48-4	cobalt	2 mg/m ³
7440-50-8	copper	33 mg/m ³
7439-89-6	iron	35 mg/m ³
7440-02-0	nickel	50 mg/m ³
7440-66-6	zinc powder -zinc dust (stabilized)	21 mg/m ³
7440-22-4	silver	170 mg/m ³
7439-96-5	manganese	5 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	0.76 mg/m ³
· PAC-3:		
7440-38-2	arsenic	100 mg/m ³
7440-48-4	cobalt	20 mg/m ³
7440-50-8	copper	200 mg/m ³
7439-89-6	iron	150 mg/m ³
7440-02-0	nickel	99 mg/m ³
7440-66-6	zinc powder -zinc dust (stabilized)	120 mg/m ³
7440-22-4	silver	990 mg/m ³
7439-96-5	manganese	1,800 mg/m ³
7440-43-9	cadmium (non-pyrophoric)	4.7 mg/m ³

7 Handling and storage

- **Handling:**

- **Precautions for safe handling**

Prevent formation of dust.

Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

- **Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **Conditions for safe storage, including any incompatibilities**

- **Storage:**

- **Requirements to be met by storerooms and receptacles:**

Store in a cool, dry place. Use and store with adequate ventilation. Keep containers closed when not in use.

- **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:**

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:** Wash hands before breaks and at the end of work.

- **Respiratory protection:**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

(Contd. on page 4)

Product Name: Low-level trace metals on cellulose ester filter paper

(Contd. of page 3)

· **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:**

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Solid
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: Undetermined.

· **Flash point:** Not applicable.

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

· **Decomposition temperature:** Not applicable.

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

· **Danger of explosion:** Not determined.

· **Explosion limits:**

Lower: Not applicable.

Upper: Not applicable.

· **Vapor pressure:** Not applicable.

· **Density** Not applicable.

· **Relative density** Not applicable.

· **Vapor density** Not applicable.

· **Evaporation rate** Not applicable.

· **Solubility in / Miscibility with**

Water: Insoluble.

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

· **Viscosity:**

Dynamic: Not applicable.

Kinematic: Not applicable.

· **Solvent content:**

VOC content: 0,00 %

· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.

(Contd. on page 5)

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/10/2019

Reviewed on 01/10/2019

Product Name: Low-level trace metals on cellulose ester filter paper

(Contd. of page 4)

- **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** Heat, flames and sparks.
- **Incompatible materials:** Strong acids, Strong bases, Cellulose and its derivatives may react vigorously with:; bleaching powder, Fluorine, Nitric acid.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

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

7440-38-2	arsenic	I
7440-48-4	cobalt	2B
7439-92-1	lead	2B
7440-02-0	nickel	2B
7440-47-3	chromium	3
7440-41-7	beryllium	I
7440-43-9	cadmium (non-pyrophoric)	I

- **NTP (National Toxicology Program)**

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

- **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 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**
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging
Dispose of as unused product.
- **Recommendation:** Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

(Contd. on page 6)

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/10/2019



Reviewed on 01/10/2019

Product Name: Low-level trace metals on cellulose ester filter paper

(Contd. of page 5)

- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· UN-Number · DOT, ADR, IMDG, IATA	UN3270
· UN proper shipping name · DOT · ADR · IMDG, IATA	Nitrocellulose membrane filters 3270 Nitrocellulose membrane filters NITROCELLULOSE MEMBRANE FILTER
· Transport hazard class(es) · DOT	
	
· Class · Label	4.1 Flammable solids, self-reactive substances and solid desensitised explosives 4.1
· ADR, IMDG, IATA	
	
· Class · Label	4.1 Flammable solids, self-reactive substances and solid desensitised explosives 4.1
· Packing group · DOT, ADR, IMDG, IATA	II
· Environmental hazards:	Not applicable.
· Special precautions for user · Danger code (Kemler): · EMS Number:	Warning: Flammable solids, self-reactive substances and solid desensitised explosives - F-A,S-I
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· ADR · Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· IMDG · Limited quantities (LQ) · Excepted quantities (EQ)	1 kg Code: E2 Maximum net quantity per inner packaging: 30 g Maximum net quantity per outer packaging: 500 g
· UN "Model Regulation":	UN 3270 NITROCELLULOSE MEMBRANE FILTERS, 4.1, II

15 Regulatory information

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

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

7440-38-2	arsenic
7440-48-4	cobalt

(Contd. on page 7)

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/10/2019

Reviewed on 01/10/2019

Product Name: Low-level trace metals on cellulose ester filter paper

(Contd. of page 6)

7440-50-8	copper
7439-92-1	lead
7440-02-0	nickel
7440-28-0	thallium
7440-62-2	vanadium
7440-66-6	zinc powder -zinc dust (stabilized)
7440-39-3	barium
7440-47-3	chromium
7440-22-4	silver
7440-41-7	beryllium
7439-96-5	manganese
7440-43-9	cadmium (non-pyrophoric)

· TSCA (Toxic Substances Control Act):

9004-70-0	Cellulose nitrate
9004-35-7	Cellulose Acetate
7440-38-2	arsenic
7440-48-4	cobalt
7440-50-8	copper
7439-89-6	iron
7440-02-0	nickel
7440-66-6	zinc powder -zinc dust (stabilized)
7440-22-4	silver
7439-96-5	manganese
7440-43-9	cadmium (non-pyrophoric)

· Proposition 65

· Chemicals known to cause cancer:

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

· Chemicals known to cause reproductive toxicity for females:

7439-92-1	lead
-----------	------

· Chemicals known to cause reproductive toxicity for males:

7439-92-1	lead
7440-43-9	cadmium (non-pyrophoric)

· Chemicals known to cause developmental toxicity:

7439-92-1	lead
7440-43-9	cadmium (non-pyrophoric)

· Carcinogenic categories

· EPA (Environmental Protection Agency)

7440-38-2	arsenic	A
7440-50-8	copper	D
7439-92-1	lead	B2
7440-66-6	zinc powder -zinc dust (stabilized)	D, I, II
7440-39-3	barium	CBD, NL
7440-47-3	chromium	D
7440-22-4	silver	D
7440-41-7	beryllium	L, CBD
7439-96-5	manganese	D
7440-43-9	cadmium (non-pyrophoric)	B1

· TLV (Threshold Limit Value established by ACGIH)

7440-38-2	arsenic	A1
7440-48-4	cobalt	A3

(Contd. on page 8)

Safety Data Sheet
acc. to OSHA HCS

Printing date 01/10/2019

Reviewed on 01/10/2019

Product Name: Low-level trace metals on cellulose ester filter paper

(Contd. of page 7)

7439-92-1	lead	A3
7440-02-0	nickel	A5
7440-39-3	barium	A4
7440-47-3	chromium	A4
7440-41-7	beryllium	A1
7440-43-9	cadmium (non-pyrophoric)	A2

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

7440-38-2	arsenic
7440-02-0	nickel
7440-41-7	beryllium
7440-43-9	cadmium (non-pyrophoric)

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

· **Hazard pictograms**



GHS02

· **Signal word** Danger

· **Hazard statements**

H228 Flammable solid.

· **Precautionary statements**

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read label before use.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Wear protective gloves/protective clothing/eye protection/face protection.

In case of fire: Use for extinction: CO2, powder or water spray.

· **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** 01/10/2019 / -

· **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

Flam. Sol. 1: Flammable solids – Category 1