

**SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/
UNDERTAKING****1.1 Product identifier****1.1.1 Commercial Product Name**

SpectraFlair Bright Silver HSA Pigment (wetted)

1.1.2 Product code

Bright Silver HSA

Components: See also section 3

REACH registration is not applicable for mixtures. The components of the mixture will be registered latest according to the 1 to 10 tonnes deadline.

1.2 Relevant identified uses of the substance or mixture and uses advised against**1.2.1 Recommended use**

Colouring agents, pigments

1.3 Details of the supplier of the safety data sheet**1.3.1 Supplier**

REACHLaw Ltd. (Only Representative)

Street address

Vänrikinkuja 3 JK 21

Postcode and post office

02600 Espoo

Finland

Telephone

+358(0) 9 412 3055

Telefax

+358(0) 9 412 3049

Email

SDS@reachlaw.fi, webpage: www.reachlaw.fi

1.3.3 Identification of the non-community manufacturer

Viavi Solutions

1402 Mariner Way

95407-7307 Santa Rosa

USA

Telephone: 1(707) 525-9200

Email: ospcustomerservice@viavisolutions.com

1.4 Emergency telephone number**1.4.1 Telephone number, name and address**

EU-wide emergency number: 112

See section 16.6 for the list of telephone numbers of poison centers in the European Economic Area.

SECTION 2. HAZARDS IDENTIFICATION

The product is classified as dangerous in accordance with Regulation (EC) No. 1272/2008. Hazardous. Highly flammable. Causes eye and skin irritation. May cause respiratory irritation.

2.1 Classification of the substance or mixture**1272/2008 (CLP)**

Flam. Sol. 1, H228

Skin Irrit. 2, H315

Eye Irrit. 2, H319

STOT SE 3, H335

2.2 Label elements**1272/2008 (CLP)**

GHS02 - GHS07

Signal word

Danger**Hazard Statements**

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Viavi Solutions

Date 07/10/2015

Previous date: 09/02/2015

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H228	Flammable solid.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

Precautionary Statements

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P362	Take off contaminated clothing and wash before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). The PBT and vPvB criteria of Annex XIII to the regulation does not apply to inorganic substances.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

This product is a microscopic 3-layer multilayer flake having a sandwich structure with aluminum in the core surrounded on each side by a layer of magnesium fluoride. 1-propoxypropan-2-ol is present as a wetting agent to reduce the generation of airborne dusts.

Hazardous components

CAS/EC and Reg.number	EINECS	Chemical name of the substance	Concentration	Classification
7429-90-5	231-072-3	Aluminium	22.5-27.5 %	CLP: Water-react. 2; H261, Flam. Sol. 1; H228
7783-40-6	231-995-1	Magnesium Fluoride	42.5-47.5 %	CLP: Eye Irrit. 2; H319, Skin Irrit. 2; H315, STOT SE 3; H335
1569-01-3	216-372-4	1-propoxypropan-2-ol	30 %	CLP: Flam. Liquid 3; H226, Eye Irrit. 2; H319

3.3 Other information

This product is a mixture. Health hazard information is based on its components. Physical hazards: flammable.

SECTION 4. FIRST AID MEASURES

4.1 Description of first aid measures

Consult a physician. Show this safety data sheet to the doctor in attendance.

4.1.2 Inhalation

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

4.1.3 Skin contact

Take off all contaminated clothing immediately. Wash off immediately with soap and plenty of water. Consult a physician.

4.1.4 Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.1.5 Ingestion

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

Causes eye and skin irritation. Itching. Difficulty in breathing.

- 4.3 Indication of immediate medical attention and special treatment needed**
Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

- 5.1 Extinguishing media**
- 5.1.1 Suitable extinguishing media**
Alcohol-resistant foam ; Dry powder ; Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- 5.1.2 Extinguishing media which must not be used for safety reasons**
Halons; Carbon dioxide (CO₂)
- 5.2 Special hazards arising from the substance or mixture**
Contact with water liberates extremely flammable gases. - Gives off hydrogen by reaction with metals. Decomposition products - Hydrogen fluoride metal oxides. Container may explode if heated. Water in the container will lead to increased pressure and risk of explosion. Burning produces noxious and toxic fumes.
- 5.3 Advice for firefighters**
Wear suitable protective equipment. Wear full protective clothing and self-contained breathing apparatus. Immediately evacuate personnel to safe areas. Do not allow run-off from fire fighting to enter drains or water courses.
- 5.4 Specific methods**
No information available.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- 6.1 Personal precautions, protective equipment and emergency procedures**
Use personal protective equipment. Avoid contact with skin, eyes and clothing. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Keep away from sources of ignition - No smoking. Keep away from flames and sparks. Avoid dust formation. Avoid breathing vapours, mist or gas.
- 6.2 Environmental precautions**
Do not allow material to contaminate ground water system. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Try to prevent the material from entering drains or water courses.
- 6.3 Methods and materials for containment and cleaning up**
Prevent further leakage or spillage if safe to do so. Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly. Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal. - Caution: Water in the container will lead to increased pressure and risk of explosion. Dispose of as hazardous waste in compliance with local and national regulations.
- 6.4 Reference to other sections**
See also section 8.

SECTION 7. HANDLING AND STORAGE

- 7.1 Precautions for safe handling**
Ensure adequate ventilation, especially in confined areas. Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Avoid breathing vapours, mist or gas.

Hygiene measures

When using, do not eat, drink or smoke. Remove and wash contaminated clothing before re-use. Regular cleaning of equipment, work area and clothing.

7.2 Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labelled containers. Keep at temperatures below 49 °C. Never allow product to get in contact with water during storage.

7.3 Specific end use(s)

Colouring agents, pigments.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1 Control parameters**

Mixture Threshold limits Values See also section 8.1.3

8.1.1 Threshold limits

7429-90-5	Aluminium, poeder	15 mg/m ³ (8 h) OSHA PEL, total dust
7429-90-5	Aluminium, poeder	5 mg/m ³ (8 h) OSHA PEL, respirable fraction
7783-40-6	Magnesium Fluoride	2.5 mg/m ³ (8 h) TWA, Mixtures of inorganic fluorides and hydrogen fluoride

8.1.2 Other information on limit values

No information available.

8.1.3 Limit values in other countries

Exposure controls / (Biological occupational exposure limits):**Aluminium, poeder (CAS 7429-90-5):**Austria : STEL 20 mg/m³; MAK: 10 mg/m³Germany : MAK: 4 mg/m³ ; MAK: 1.5 mg/m³ / (200 µg/L Urine EOS)Denmark : TWA: 10 mg/m³, TWA: 10 mg/m³Finland : TWA: 2 mg/m³France : VME: 10 mg/m³, VME: 5 mg/m³; VME: 5 mg/m³Ireland : TWA: 10 mg/m³; TWA: 4 mg/m³Norway : TWA: 5 mg/m³Poland : NDS: 2.5 mg/m³; NDS: 1.2 mg/m³Portugal : TWA: 10 mg/m³Switzerland : MAK: 3 mg/m³ / (60 µg/g Creatinine Urine, no restrictions)United Kingdom : STEL: 30 mg/m³; STEL: 12 mg/m³; TWA: 10 mg/m³; TWA: 4 mg/m³Spain : VLA-ED: 10 mg/m³**Magnesium fluoride (CAS 7783-40-6)**EU : TWA: 2.5 mg/m³Denmark : TWA: 2.5 mg/m³Finland : TWA: 2.5 mg/m³France : VME: 2.5 mg/m³ / (3 mg/g Creatinine Urine: BOS; 10 mg/g Creatinine Urine: EOS)Germany : MAK: 1 mg/m³Ireland : TWA: 2.5 mg/m³Italy : TWA: 2.5 mg/m³ / (3 mg/g Creatinine Urine: BOS; 10 mg/g Creatinine Urine: EOS)Netherlands : STEL: 2 mg/m³Norway : TWA: 0.5 mg/m³ ; STEL: 1.5 mg/m³Poland : NDSch: 3 mg/m³; NDS: 1 mg/m³Portugal : TWA: 2.5 mg/m³Spain : VLA-ED: 2.5 mg/m³United Kingdom : TWA: 2.5 mg/m³**8.1.4 DNELs**

No information available.

8.1.5 PNECs

No information available.

8.2 Exposure controls**8.2.1 Appropriate engineering controls**

Avoid exceeding of the given occupational exposure limits (see section 8). Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. Ensure that eyewash stations and safety showers are close to the workstation location.

8.2.2 Individual protection measures**8.2.2.1 Respiratory protection**

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators.

8.2.2.2 Hand protection

Neoprene; Rubber; Latex gloves.

8.2.2.3 Eye/face protection

Safety glasses with side-shields.

8.2.2.4 Skin protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

8.2.3 Environmental exposure controls

Do not allow material to contaminate ground water system.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**9.1 Important Health Safety and Environmental Information****9.1.1 Appearance**

grey paste

9.1.2 Odour

1-propoxypropan-2-ol used as a wetting agent has an ether-like odor.

9.1.3 Odour threshold

No information available.

9.1.4 pH

Not applicable.

9.1.5 Melting point/freezing point

1263 °C

9.1.6 Initial boiling point and boiling range

2260 °C. 140-160 °C for 1-propoxypropan-2-ol.

9.1.7 Flash point

Not applicable. 46.4 °C (115.5 °F) for 1-propoxypropan-2-ol.

9.1.8 Evaporation rate

No information available.

9.1.9 Flammability (solid, gas)

Flammable

9.1.10 Explosive properties**9.1.10.1 Lower explosion limit**

No information available.

9.1.10.2 Upper explosion limit

No information available.

9.1.11 Vapour pressure

No information available.

9.1.12 Vapour density

No information available.

9.1.13 Relative density

No information available.

9.1.14 Solubility(ies)**9.1.14.1 Water solubility**

Insoluble

9.1.14.2 Fat solubility (solvent - oil to be specified)

No information available.

9.1.15 Partition coefficient: n-octanol/water

Not applicable. Log Pow = 0.621 @ 20 °C (pH 7) for 1-propoxypropan-2-ol.

9.1.16 Auto-ignition temperature

No data is available on the product itself. 252 °C for 1-propoxypropan-2-ol.

9.1.17 Decomposition temperature

No information available.

9.1.18 Viscosity

Not applicable.

9.1.19 Explosive properties

Not explosive

9.1.20 Oxidising properties

The substance or mixture is not classified as oxidizing.

9.2 Other information

No information available.

SECTION 10. STABILITY AND REACTIVITY**10.1 Reactivity**

No information available.

10.2 Chemical stability

Stable up to 200 °C.

10.3 Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4 Conditions to avoid

Avoid dust formation.

- 10.5 Incompatible materials**
Acids; Oxidizing agents (strong)
- 10.6 Hazardous decomposition products**
Fluorine Compounds.

SECTION 11. TOXICOLOGICAL INFORMATION

- 11.1 Information on toxicological effects**
Likely route of exposure: Contact with eyes or skin causes irritation. This product is a mixture. Health hazard information is based on its components.
- 11.1.1 Acute toxicity**
Not classified.
- 11.1.2 Irritation and corrosion**
Causes eye and skin irritation.
- 11.1.3 Sensitisation**
Not classified.
- 11.1.4 Subacute, subchronic and prolonged toxicity**
Not classified.
- 11.1.5 STOT-single exposure**
Not classified.
- 11.1.6 STOT-repeated exposure**
Not classified.
- 11.1.7 Aspiration hazard**
Not applicable.
- 11.1.8 Other information on acute toxicity**
No information available.

SECTION 12. ECOLOGICAL INFORMATION

- 12.1 Toxicity**
- 12.1.1 Aquatic toxicity**
Not classified Environmentally hazardous. Aquatic toxicity is unlikely due to low solubility.
- 12.1.2 Toxicity to other organisms**
No information available.
- 12.2 Persistence and degradability**
- 12.2.1 Biodegradation**
The methods for determining biodegradability are not applicable to inorganic substances.
- 12.2.2 Chemical degradation**
Not applicable.
- 12.3 Bioaccumulative potential**
No information available.
- 12.4 Mobility in soil**
Adsorbs on soil.
- 12.5 Results of PBT and vPvB assessment**
This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT). The PBT and vPvB criteria of Annex XIII to the regulation does not apply to inorganic substances.
- 12.6 Other adverse effects**
No information available.

SECTION 13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Dispose of as hazardous waste in compliance with local and national regulations. Contaminated packaging should be emptied as far as possible. Handle in accordance with good industrial hygiene and safety practice. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal. Waste must be classified and labelled prior to recycling or disposal. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

14.1	UN number	3175
14.2	UN proper shipping name	SOLID CONTAINING FLAMMABLE LIQUIDS, N.O.S. (Contains 1-propoxypropan-2-ol, Aluminium)
14.3	Transport hazard class(es)	4.1
14.4	Packing group	II
14.5	Environmental hazards	Not classified.
14.6	Special precautions for users	No information available.
14.7	Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available.

SECTION 15. REGULATORY INFORMATION

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture <u>EU Regulation (EC) No. 1907/2006 (REACH)</u> Annex XIV - List of substances subject to authorisation, Substances of very high concern: N/A Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: N/A
15.2	Chemical safety assessment Not applicable. A Chemical Safety Assessment is not required for this substance.

SECTION 16. OTHER INFORMATION

16.1	Additions, Deletions, Revisions Version 2.0
16.2	Key or legend to abbreviations and acronyms

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Viavi Solutions

Date 07/10/2015

Previous date: 09/02/2015

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- CLP - Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
- DNEL - Derived no-effect level
- MAK - Maximale Arbeitsplatzkonzentrationen (Germany): maximum concentration of a chemical substance in the workplace, expressed as daily 8-hour time-weighted average values and apply to healthy adults.
- NDS - Najwyższe Dopuszczalne Stężenie (maximum admissible concentration in Poland)
- NDSch - Najwyższe Dopuszczalne Stężenie Chwilowe (maximum admissible short-term concentration in Poland)
- OSHA - Occupational Safety and Health Administration (USA)
- PBT/vPvB - Persistent, bioaccumulative and toxic/ very persistent and very bioaccumulative
- PEL - Permissible exposure limit
- PNEC - Predicted no-effect concentration
- REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals
- STEL - Short term exposure limit
- STOT SE - Specific Target Organ Toxicity, Single Exposure
- TWA - Time Weighted Average
- VME - Valeur Moyenne d'Exposition (National exposure level in France)
- VLA-ED - Valor Límite Ambiental Exposición Diaria (Occupational exposure limit in Spain)

16.3 Key literature references and sources for data

Material Safety Data Sheet SpectraFlair® pigment Version 10-11-2011

16.4 Classification procedure

Classification according to Regulation (EU) 1272/2008 with the correlation table 67/548/EEC or 1999/45/EC (Annex VII of CLP)

16.5 List of relevant R phrases, hazard statements, safety phrases and/or precautionary statements

- H226 Flammable liquid and vapour.
- H261 In contact with water releases flammable gases.

16.6 Emergency telephone number

Europe-wide emergency number: 112

Contact a poison control centre. List of Telephone Numbers :

Austria (Vienna Wien) +43 1 406 43 43; Belgium (Brussels Bruxelles) +32 70 245 245; Bulgaria (Sofia) +359 2 9154 409; Czech Republic (Prague Praha) +420 224 919 293; Denmark (Copenhagen) 82 12 12 12; Estonia (Tallinn) 112; Finland (Helsinki) +358 9 471 977; France (Paris) +33 1 40 0548 48; Germany (Berlin) +49 30 19240; Greece (Athens Athinai) +30 10 779 3777; Hungary (Budapest) 06 80 20 11 99; Iceland (Reykjavik) +354 525 111, +354 543 2222; Ireland (Dublin) +353 1 8379964; Italy (Rome) +39 06 305 4343; Latvia (Riga) +371 704 2468; Lithuania (Vilnius) +370 5 236 20 52 or +370 687 53378; Malta (Valletta) 2425 0000; Netherlands (Bilthoven) +31 30 274 88 88; Norway (Oslo) 22 591300; Poland (Gdansk) +48 58301 65 16 or +48 58 349 2831; Portugal (Lisbon Lisboa) 808 250 143; Romania (Bucharest) +40 21 3183606 Slovakia (Bratislava) +421 2 54 77 4166; Slovenia (Ljubljana) + 386 41 650 500; Spain (Barcelona) +34 93 227 98 33 or +34 93 227 54 00 bleep 190; Sweden (Stockholm) 112 or +46 8 33 12 31 (mon-fri 9.00-17.00); United Kingdom (London) 112 or 0845 4647 (NHS Direct).