Safety Data Sheet

<table>
<thead>
<tr>
<th>Product name:</th>
<th>EM-Tec STC15 MEK solvent / thinner / cleaner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Nr.:</td>
<td>SDS001150021700-01</td>
</tr>
<tr>
<td>Date:</td>
<td>August 6th 2018</td>
</tr>
<tr>
<td>Version:</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Section 1: Identification of the substance or mixture and the company

#### 1.1. Product Identifier

EM-Tec STC15 Methyl ethyl ketone (MEK) solvent / thinner / cleaner

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Diluting, removing and cleaning of EM-Tec AG15 silver paint

#### 1.3. Details of the supplier of the Safety Data Sheet

- **Vof Micro to Nano**
- Wateringweg 79
- 2031EK Haarlem
- Netherlands
- Tel: +31(0)85-2013155
- E: info@microtonano.com

#### 1.4 Emergency telephone number

112 (NLD) or your national emergency telephone number for chemical spills, leaks, fires, exposures or accidents

### Section 2: Hazards identification

#### 2.1. Classification of the substance or mixture

| Physical | Flammable liquid, category 2 |
| Health | Eye irritation, category 2 |
| Environment | Not classified |
| Other hazards | Not classified |

**Classification according to Regulation EC Nr. 1272/2008**

<table>
<thead>
<tr>
<th>F: HIGHLY FLAMMABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xi: Irritant</td>
</tr>
<tr>
<td>Health:</td>
</tr>
<tr>
<td>R36: Irritating to eyes</td>
</tr>
<tr>
<td>R66: Repeated exposure may cause skin dryness or cracking</td>
</tr>
<tr>
<td>R67: Vapours may cause drowsiness and dizziness</td>
</tr>
<tr>
<td>Physical</td>
</tr>
<tr>
<td>R11: Highly flammable</td>
</tr>
</tbody>
</table>
2.2 Labeling elements

Labelling accordance to Regulation EC Nr. 1272/2008

Hazard pictogramm(s):

Signal word: Danger

Hazard statement(s):
H225: Highly flammable liquid and vapour
H319: Causes serious eye irritation
H336: May cause drowsiness or dizziness

Precautionary statement(s)
Prevention:
P102: Keep out of reach of children
P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233: Keep container tightly closed
P241: Use explosion proof electrical/ventilating/lighting/intrinsically safe equipment
P242: Use only non-sparking tools
P243: Take precautions against static discharge
P261: Avoid breathing mist/vapours/spray
P270: Do not eat, drink or smoke when using this product
P 271: Use outdoors or in well ventilated area (fume hood)
P280: Wear protective gloves/protective clothing/eye protection/face protection

Response:
P331: No NOT induce vomiting
P312: Call a poison center/doctor/physician/first aider if you feel unwell
P370+378: In case of fire: Use dry chemical powder, alcohol-resistant foam or carbon dioxide (CO2) for extinction
P305+P351+P338: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if easy to do. Continue rinsing.
P337+P313: If eye irritation persists: Get medical attention
P303+P361+P353: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+P340: If inhaled: Remove person to fresh air and keep comfortable for
2.3 Other hazards

None

Section 3: Composition / information on components

3.1. Substances

<table>
<thead>
<tr>
<th>1. CAS No</th>
<th>2. EC No</th>
<th>3. Index No</th>
<th>4. REACH No</th>
<th>% (weight)</th>
<th>Name</th>
<th>Classification according to directive 67/548/EEC [DSD]</th>
<th>Classification according to regulation Nr 1272/2008 [CLP]</th>
</tr>
</thead>
<tbody>
<tr>
<td>78-93-3</td>
<td>201-159-606-002-00-3</td>
<td>01-2119457290-43-xxxx</td>
<td>100</td>
<td>MEK</td>
<td>Methyl ethyl ketone</td>
<td>R11R36R66R67</td>
<td>Flam. Liq. 2, Eye Irr. 2A, STOT SE 3; H225, H319, H336, EUH066</td>
</tr>
</tbody>
</table>

(* Explanation notes: see section 16)

3.2 Mixtures

Not applicable

Section 4: First aid measures

4.1. Description of first aid measures

Contact with eyes: Rinse cautiously with water for several minutes. If possible, remove contact lenses. Continue rinsing. Seek medical attention if irritation persists.

Contact with skin: Wash with water and soap. Seek medical attention if irritation persists.

Inhalation: Fresh air, keep warm and at rest. Seek medical attention of ill effects occur.

Ingestion: If swallowed, do not induce vomiting. Seek immediate medical advice.
If vomiting appears imminent or occurs hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.
Never give liquid to a person with reduced awareness
Give water to rinse out mouth, then provide water slowly as much as casually can comfortably drink
Avoid giving milk or oils
Avoid giving alcohol

4.2. Important symptoms and effects, either immediate or delayed

**Inhalation:** Excessive inhalation of solvent vapours may give rise to nausea, blurred vision, fatigue, headaches and dizziness

**Ingestion:** May cause respiratory and digestive tract irritation
Symptoms: sore throat, abdominal pain, nausea, vomiting

**Skin contact:** Continuous exposure: Dry skin. Cracking of skin

**Eye contact:** Irritating to eyes
Symptoms: redness and pain, impaired vision

4.3. Indication of any immediate medical attention and special treatment

**General advice:** If you feel unwell, seek medical advice; show product label if possible
If symptoms persist, always call a doctor

Section 5: Firefighting Measures

5.1. Extinguishing media

Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Direct fire hazard. Highly flammable. Gas / vapour flammable with air within explosion limits.
Indirect fire hazard. May be ignited by sparks. Gas / vapour spreads to floor level: ignition hazard.
Direct explosion hazard
Indirect explosion hazard
Upon combustion CO and CO2 are formed. Violent to explosive reaction with many compounds.
Keep away from strong oxidisers.

5.3 Advice to firefighters

Fight fire from a safe distance, with adequate cover
Do not move the load if exposed to heat.
In case of fire; do not breathe fumes
Wear self-contained breathing apparatus for fire fighting

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Shut off all ignition sources
Ensure adequate ventilation
Wear suitable protective clothing including eye/face protection

6.2 Environmental precautions

Avoid release to the environment
Do not allow to enter public sewers and waterways

6.3 Methods and material for containment and clean up

Absorb spillage in suitable inert material
Clean up spills immediately
Avoid breathing vapours
Control personal contact with the substance, by using protective equipment
Collect spillage, absorbed spillage and wipes in a flammable waste container
Wash spill area with soap and water to remove last traces of residue

6.4 Reference to other sections

For further information see section 8

Section 7: Handling and storage

7.1. Precautions for safe handling

Keep away from sources of ignition
Take precautions against static discharges
Equipment should be grounded
Use explosion proof electrical/ventilating/lighting/equipment
Only use non-sparking tools
Do not breathe aerosols or vapours
Ensure adequate ventilation
Avoid contact with skin and eyes
Wash thoroughly after use
Wear protective gloves/protective clothing/eye protection/face protection
Have eyewash bottles available

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed, in a cool, well ventilated place
Keep away from ignition sources
Store away from oxidising agents
Keep cool
Keep out of reach of children

7.3 Specific end uses(s)

Solvent / thinner / cleaner for EM-Tec AG15 silver paint.

Section 8: Exposure control and personal protection

8.1. Control parameters

Exposure limits

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Material Name</th>
<th>Source</th>
<th>TWA</th>
<th>STEL</th>
<th>Peak</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl ethyl ketone</td>
<td>MEK</td>
<td>UK</td>
<td>200</td>
<td>Not available</td>
<td>Not available</td>
<td>Not available</td>
</tr>
<tr>
<td></td>
<td></td>
<td>EU</td>
<td>200</td>
<td>300 ppm</td>
<td>Not available</td>
<td>Not available</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Control procedures: Ensure adequate ventilation
Keep away from heat sources and ignition sources
Take precautions against static discharges

Personal protection: Take precautions to avoid contact with eyes and skin when handling the products
Ensure adequate ventilation

Inhalation: In case of insufficient ventilation, wear suitable respiratory equipment:
Air purifying respirator with organic gas/vapour cartridge (type A)

Hands and skin: Wear suitable gloves against chemicals; recommended gloves:
Nitrile

Eyes: Wear safety goggles or full-face protection
Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/physical state:</td>
<td>Liquid</td>
</tr>
<tr>
<td>Colour:</td>
<td>colourless</td>
</tr>
<tr>
<td>Odour:</td>
<td>Acetone like pungent aromatic / sweet / fruity odour</td>
</tr>
<tr>
<td>pH</td>
<td>7</td>
</tr>
<tr>
<td>Melting point:</td>
<td>-86°C</td>
</tr>
<tr>
<td>Boiling point/range:</td>
<td>82°C</td>
</tr>
<tr>
<td>Flash point:</td>
<td>-9°C (closed cup)</td>
</tr>
<tr>
<td>Relative evaporation rate:</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Explosion limits: upper limit:</td>
<td>11.5%</td>
</tr>
<tr>
<td>lower limit:</td>
<td>1.8%</td>
</tr>
<tr>
<td>Vapour pressure:</td>
<td>12.6 kPa</td>
</tr>
<tr>
<td>Relative density:</td>
<td>0.805 g/cm3 @ 20°C</td>
</tr>
<tr>
<td>Solubility in water:</td>
<td>soluble; 250 g/l</td>
</tr>
<tr>
<td>Auto-ignition:</td>
<td>515°C</td>
</tr>
<tr>
<td>Viscosity:</td>
<td>0.42 Pa.s</td>
</tr>
</tbody>
</table>

9.2 Other information

VOC: 100% MEK

Section 10: Stability and reactivity

10.1. Reactivity

Heating may cause fire.

10.2 Chemical stability

Stable under prescribed storage conditions

10.3 Possibility of hazardous reactions

Not known
10.4 Conditions to avoid

Avoid overheating, ignition sources and incompatible substances

10.5 Incompatible materials

Strong oxidising agents, strong bases, strong acids

10.6 Hazardous decomposition products

Fume, CO, CO2.

Section 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure:

- **Inhalation:** Inhalation of solvent vapours may give rise to nausea, headaches and dizziness
- **Skin contact:** Not classified
- **Eye contact:** Irritation to eyes

Toxicological data:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Toxicity</th>
<th>Irritation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEK Methyl ethyl ketone</td>
<td>Dermal (rabbit) LD50: 5000mg/kg</td>
<td>Eye - irritant</td>
</tr>
<tr>
<td></td>
<td>Inhalation (rat) LC50: 20mg/L/4hrs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oral (rat) LD50: 2000 mg/kg</td>
<td>Skin - mild</td>
</tr>
</tbody>
</table>

Section 12: Ecological information

12.1. Toxicity

Not classified

12.2 Persistence and degradability

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEK Methyl ethyl ketone</td>
<td>LOW</td>
<td>Medium</td>
</tr>
</tbody>
</table>
12.3 Bioaccumulative potential

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Bioaccumulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEK Methyl ethyl ketone</td>
<td>Will not bio-accumulate</td>
</tr>
</tbody>
</table>

12.4 Mobility in soil

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Mobility in soil</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEK Methyl ethyl ketone</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

12.5 Results of PBT and vPvB assessment

No information available

12.6 Hazardous decomposition products

No experimental data available

### Section 13: Disposal considerations

#### 13.1. Waste treatment methods

**Product:** This material and its container must be disposed of in a safe way. Do not discharge into drains or the environment, dispose to an authorised waste collection point.

**National regulations:** Disposal should be in accordance with local, state or national legislation.

### Section 14: Transport information

Labels required:

![Flammable Liquid 3]
Safety Data Sheet

Product name: EM-Tec STC15 MEK solvent / thinner / cleaner
Document Nr.: SDS001150021700-01

Date: August 6th 2018
Version: 1.0

14.1. UN number

UN-number: 1193

14.2 UN proper shipping name

Proper shipping name: Ethyl Methyl Ketone (Methyl Ethyl Ketone)

14.3 Transport hazard class(es)

Class: 3
ADR/RID-Classification code: F1

14.4 Packing group

Packing: II
Limited Quantity 5L

14.5 Incompatible materials

ADR/RID- Environmentally hazardous: Not applicable
IMDG-Marine pollutant: No relevant data
IATA/ICAO-Environmentally hazardous: No relevant data

14.6 Special precautions for user

ADR/RID-Tunnel code: (D/E)
IMDG-EMS: F-E, S-D

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC code

Not applicable

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

UN-number: 1193
Safety Data Sheet

**Product name:** EM-Tec STC15 MEK solvent / thinner / cleaner  
**Document Nr.:** SDS001150021700-01  
**Date:** August 6th 2018  
**Version:** 1.0

### 15.2 Chemical safety assessment

No information available

### Section 16: Other information

**RoHS Directive Compliant**

This product is fully compliant with the directive 2100/65/EU Annex II (RoHS). It does not contain any lead, cadmium, mercury, hexavalent chromium, PBB's or PBDE's.

**WEEE**

This product is not a piece of electrical or electronic equipment, and it therefore not governed by Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)

**Abbreviations:**

- Asp. Tox: Aspiration hazard
- Carc.: Carcinogenicity
- Exp.: Exposure
- Flam.: Flammable
- GHS: Global Harmonised System of Classification of Labelling Chemicals
- Irrit.: Irritant
- LC50: Lethal Concentration 50%
- LCl0: Lowest published lethal concentration
- LD50: Lethal Dose 50%
- N/A: Not applicable
- N/E: Not estimated
- PBT: Persistent Bioaccumulative and Toxic
- WEL: Workplace Exposure Limit
- Repr.: Reproductive toxicant
- RoHS: Restriction of Hazardous Substance
- SEM: Scanning Electron Microscope
- STEL: Short-Term Exposure Limit
- STOT: Specific Target Organ Toxicity
- TClo: Lowest published toxic concentration
- vPvB: very Persistent and very Bioaccumulative
- WEEE: Waste Electrical and Electronic Equipment

**DSD / DPD label elements**

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Micro to Nano  
Innovative Microscopy Supplies  

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2031EK Haarlem  
The Netherlands  

T +31-85-2013155  
E info@microtonano.com  
I www.microtonano.com
Full Text Risk and Hazard codes

- H225 – Highly flammable liquid and vapours
- H226 – Flammable liquid and vapour.
- H228 – Flammable solid
- H302 – Harmful if swallowed.
- H312 – Harmful in contact with skin.
- H314 – Causes severe skin burns and eye damage.
- H317 – May cause an allergic skin reaction.
- H319 – Causes serious eye irritation.
- H332 – Harmful if inhaled.
- H334 – May cause allergy or asthma symptoms or breathing difficulties if inhaled
- H335 – May cause respiratory irritation.
- H336 – May cause drowsiness or dizziness
- H340 – May cause genetic defects.
- H351 – Suspected of causing cancer.
- H360 – May damage fertility or the unborn child.
- H370 – Causes damages to organs.
- H371 – May cause damage to organs.
- H372 – Causes damage to organs through prolonged or repeated exposure.
- H400 – Very toxic to aquatic life.
- H410 – Very toxic to aquatic life with long lasting effects.
- H411 – Toxic to aquatic life with long lasting effects.
- H413 – May cause long lasting harmful effects to aquatic life.

- R10 – Flammable.
- R11 – Highly flammable.
- R20 – Harmful by inhalation.
- R20/22 – Harmful by inhalation and if swallowed.
- R36 – Irritating to eyes.
- R37 – Irritating respiratory system.
- R38 – Irritating to skin.
- R52 – Harmful to aquatic organisms
- R63 – Possible risk of harm to the unborn child.
- R65 – Harmful – May cause long damage if swallowed
- R66 – Repeated exposure may cause skin dryness and cracking.
- R67 – Vapours may cause drowsiness and dizziness

Safety advice:

- S02 – Keep out of reach of children.
- S09 – Keep container in a well-ventilated place.
- S13 – Keep away from food, drinks, and animal feeding stuff.
- S16 – Keep away from sources of ignition. No smoking.
- S23 – Do not breath gas/fumes/vapour/spray.
- S26 – In case of contact with eyes, rinse with plenty of water and seek medical help.
S28 – After contact with skin, wash immediately with detergent and plenty of waterways.
S29 – Do not empty in drains.
S33 – Take precautionary measures against static discharges.
S35 – This material and its container must be disposed of in a safe way.
S36 – Wear suitable protective clothing.
S37 – Wear suitable gloves.
S38 – In case of insufficient ventilation, wear suitable respiratory equipment.
S39 - Wear eye / face protection.
S40 – In case of insufficient ventilation, wear suitable respiratory equipment.
S41 – In case of fire and/or explosion; DO NOT breathe fumes.
S43 – In case of fire use....
S45 – In case of accident or if you feel unwell, immediately contact Doctor or Poisons information center (show label if possible).
S46 – If swallowed, seek immediate medical advice and show label if possible.
S52 – Not recommended for interior use on large surfaces.
S53 – Avoid exposure – obtain special instructions before use.
S56 – Dispose of this material and its container at hazardous or special waste collection point.
S57 – Use appropriate container to avoid environment contamination.
S61 – Avoid release to the environment
S63 – In case of accident by inhalation, remove casualty to fresh air and keep at rest.
S64 – If swallowed, rinse mouth with water (only if person is conscious)

This product should be stored, handled, and used in accordance with good industrial hygiene practices and in accordance with any legal regulation.
The information contained herewith is based on the present state of our knowledge and is intended to describe the product from the point of view of safety requirements. It does not guarantee any specific properties.
It is the responsibility of the user to query and verify any information seeming suspect or where doubt on the validity may exist. The buyer assumes all responsibility of using and handling the product in accordance with local, state, federal and international regulations.