

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : Filmflux

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

Use of the substance/mixture : Additive for preflux bathes, slightly acidic solution with Al, Ni, Mg, Mn salts.

#### 1.3. Details of the supplier of the safety data sheet

SOPRIN S.r.l.  
Via dell'Industria 106  
31052 Maserada Sul Piave (TV), - Italy  
T (+39) 0422 521025 - F (+39) 0422 521060  
[soprin@soprin.it](mailto:soprin@soprin.it) (Alessandro Padovan)

#### 1.4. Emergency telephone number

Emergency number : Chemtrec 800 424 9300

### SECTION 2: Hazard(s) identification

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

##### Classification (GHS-US)

Acute Tox. 4 (Oral) H302  
Resp. Sens. 1 H334  
Skin Sens. 1 H317  
Muta. 2 H341  
Carc. 1A H350  
Repr. 1B H360  
STOT RE 1 H372  
Aquatic Chronic H411

Full text of classification categories and H statements : see section 16

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US) :



GHS07

GHS08

GHS09

Signal word (GHS-US) :

: Danger

Hazard statements (GHS-US) :

: H302 - Harmful if swallowed  
H317 - May cause an allergic skin reaction  
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H341 - Suspected of causing genetic defects  
H350 - May cause cancer  
H360 - May damage fertility or the unborn child  
H372 - Causes damage to organs through prolonged or repeated exposure  
H411 - Toxic to aquatic life with long lasting effects

Precautionary statements (GHS-US) :

: P201 - Obtain special instructions before use  
P202 - Do not handle until all safety precautions have been read and understood  
P260 - Do not breathe dust/fume/gas/mist/vapors/spray  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray  
P264 - Wash hands thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P272 - Contaminated work clothing must not be allowed out of the workplace  
P273 - Avoid release to the environment  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P284 - [In case of inadequate ventilation] wear respiratory protection

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P301+P312 - If swallowed: Call a poison center/doctor if you feel unwell  
 P302+P352 - If on skin: Wash with plenty of water  
 P304+P341 - If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing  
 P308+P313 - If exposed or concerned: Get medical advice/attention  
 P314 - Get medical advice/attention if you feel unwell  
 P321 - Specific treatment (see section 4 on this label)  
 P330 - Rinse mouth  
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention  
 P342+P311 - If experiencing respiratory symptoms: Call a poison center/doctor  
 P363 - Wash contaminated clothing before reuse  
 P391 - Collect spillage  
 P403+P235 - Store in a well-ventilated place. Keep cool  
 P405 - Store locked up  
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulations.

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
Nickel(II) chloride hexahydrate	(CAS No) 7791-20-0	7 - 8	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Inhalation), H331 Skin Irrit. 2, H315 Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 Repr. 1B, H360 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-phrases: see section 16

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation	: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.
First-aid measures after skin contact	: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.
First-aid measures after eye contact	: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.
First-aid measures after ingestion	: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorized by a doctor.

### 4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: Inhalation of this product causes sensitization, which may then give rise to a series of inflammatory episodes, most of all characterized by obstruction and affecting the respiratory system. Sometimes, sensitization phenomena arise together with evident rhinitis and asthma. Damages to the respiratory system depend on the inhaled quantity, on the product concentration in the working environment and on the exposure time.
Symptoms/injuries after skin contact	: Upon contact with skin, this product causes sensitization (dermatitis). Dermatitis derives from skin irritation on the areas which repeatedly come into contact with the sensitizing agent. Cutaneous lesions may include: erythemas, edemas, papules, vesicles, pustules, scurries, ulcerations and exudative phenomena, whose intensity varies according to illness seriousness and affected areas. Erythemas, edemas and exudative phenomena prevail during the acute phase. Scurfy skin, dryness, ulcerations and skin thickening prevail during the chronic phase.
Symptoms/injuries after eye contact	: May cause eye irritation.

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Symptoms/injuries after ingestion : Harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, foam, powder and water spray.  
Unsuitable extinguishing media : None.

### 5.2. Special hazards arising from the substance or mixture

Fire hazard : None.  
Explosion hazard : None known.

### 5.3. Advice for firefighters

Protection during firefighting : Firefighters should wear full protective gear. Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

#### 6.1.1. For non-emergency personnel

No additional information available

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

For containment : Block the leakage if there is no hazard. Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.  
Methods for cleaning up : Collect the leaked product into a suitable container. Evaluate the compatibility of the container to be used, by checking section 10. Absorb the remainder with inert absorbent material. Make sure the leakage site is well aired. Check incompatibility for container material in section 7. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

No additional information available

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Before handling the product, consult all the other sections of this material safety data sheet. Avoid leakage of the product into the environment. Do not eat, drink or smoke during use. Remove any contaminated clothes and personal protective equipment before entering places in which people eat.

### 7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only in the original container. Store the containers sealed, in a well ventilated place, away from direct sunlight. Keep containers away from any incompatible materials, see section 10 for details.

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### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Nickel(II) chloride hexahydrate (7791-20-0)

Not applicable

#### 8.2. Exposure controls

Appropriate engineering controls	: Local exhaust and general ventilation must be adequate to meet exposure standards.
Hand protection	: Use impervious gloves such as neoprene, nitrile, or rubber for hand protection.
Eye protection	: Wear airtight protective goggles.
Skin and body protection	: Wear suitable working clothes.
Respiratory protection	: If airborne concentrations are above the applicable exposure limits, use NIOSH approved respiratory protection.

### SECTION 9: Physical and chemical properties

#### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: Green
Odor	: Slightly pungent
Odor threshold	: No data available
pH	: 2.1
pH solution	: No data available
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: No data available
Flash point	: > 100 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Specific gravity / density	: 1080 kg/m <sup>3</sup>
Solubility	: No data available
Log Pow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

#### 9.2. Other information

No additional information available

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### SECTION 10: Stability and reactivity

#### 10.1. Reactivity

No additional information available

#### 10.2. Chemical stability

The product is stable at normal handling and storage conditions.

#### 10.3. Possibility of hazardous reactions

Will not occur.

#### 10.4. Conditions to avoid

None.

#### 10.5. Incompatible materials

Not determined.

#### 10.6. Hazardous decomposition products

Not determined.

### SECTION 11: Toxicological information

#### 11.1. Information on toxicological effects

Acute toxicity : Oral: Harmful if swallowed.

Filmflux	
ATE US (oral)	500.000 mg/kg body weight
Nickel(II) chloride hexahydrate (7791-20-0)	
LD50 oral rat	LD50 oral rat
ATE US (oral)	ATE US (oral)
ATE US (gases)	ATE US (gases)
ATE US (vapors)	ATE US (vapors)
ATE US (dust, mist)	ATE US (dust, mist)

Skin corrosion/irritation : Not classified  
pH: 2.1

Serious eye damage/irritation : Not classified  
pH: 2.1

Respiratory or skin sensitization : May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity : Suspected of causing genetic defects.

Carcinogenicity : May cause cancer.

Nickel(II) chloride hexahydrate (7791-20-0)	
IARC group	1 - Carcinogenic to humans
In OSHA Hazard Communication Carcinogen list	Yes

Reproductive toxicity : May damage fertility or the unborn child.

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

### SECTION 12: Ecological information

#### 12.1. Toxicity

Nickel(II) chloride (7718-54-9)	
LC50 fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])

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Nickel(II) chloride (7718-54-9)	
EC50 Daphnia 1	6.68 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 fish 2	1.3 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [semi-static])
EC50 Daphnia 2	0.51 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

### 12.2. Persistence and degradability

No additional information available

### 12.3. Bioaccumulative potential

No additional information available

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste disposal recommendations : Dispose of contents/container in accordance with local/regional/national/international regulations.

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s. (Nickel(II) chloride hexahydrate), 9, III

UN-No.(DOT) : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s. (Nickel(II) chloride hexahydrate)

Class (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



Packing group (DOT) : III - Minor Danger

Dangerous for the environment : Yes

Marine pollutant : Yes



DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Symbols : G - Identifies PSN requiring a technical name

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DOT Special Provisions (49 CFR 172.102)	: 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies 146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination 173 - An appropriate generic entry may be used for this material 335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s.," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672) T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3) TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP
DOT Packaging Exceptions (49 CFR 173.xxx)	: 155
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: No limit
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: No limit
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel
Other information	: No supplementary information available.

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

No additional information available

### 15.2. US State regulations

#### Nickel(II) chloride hexahydrate (7791-20-0)

U.S. - New Jersey - Right to Know Hazardous Substance List

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### SECTION 16: Other information

Full text of H-phrases:

Acute Tox. 3 (Inhalation)	Acute toxicity (inhalation) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment - Chronic Hazard Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Carc. 1A	Carcinogenicity Category 1A
Carc. 1B	Carcinogenicity Category 1B
Muta. 2	Germ cell mutagenicity Category 2
Repr. 1B	Reproductive toxicity Category 1B
Resp. Sens. 1	Respiratory sensitisation Category 1
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H301	Toxic if swallowed
H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H331	Toxic if inhaled
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer
H360	May damage fertility or the unborn child
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

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product*