

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product identifier

<b>Product name</b>	Iloform RS 5116
<b>UFI:</b>	FEC2-W0WF-5007-D78E
<b>Product code</b>	455427-FR01
<b>SDS #</b>	455427
<b>Product type</b>	Liquid.

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

Identified uses
Handling and dilution of metal working fluid concentrates-Industrial
Use of lubricants in high energy open processes-Industrial
Use of lubricants in high energy open processes-Professional

<b>Use of the substance/ mixture</b>	Metalworking fluid - soluble. For specific application advice see appropriate Technical Data Sheet or consult our company representative.
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### 1.3 Details of the supplier of the safety data sheet

<b>Supplier</b>	Lubricants UK Limited, Chertsey Road, Sunbury On Thames, Middlesex, TW16 7BP
<b>E-mail address</b>	+44 (0)345 600 8125 MSDSadvice@bp.com

### 1.4 Emergency telephone number

<b>EMERGENCY TELEPHONE NUMBER</b>	Carechem: +44 (0) 1235 239 670 (24/7)
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## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

<b>Product definition</b>	Mixture
<b><u>Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]</u></b>	
Skin Irrit. 2, H315	
Eye Irrit. 2, H319	
Repr. 1B, H360FD	

**Additional information** CLP: Not classified as hazardous when diluted below 30%

See Section 16 for the full text of the H statements declared above.

See sections 11 and 12 for more detailed information on health effects and symptoms and environmental hazards.

### 2.2 Label elements

<b>UFI:</b>	FEC2-W0WF-5007-D78E
<b>Hazard pictograms</b>	



<b>Signal word</b>	Danger
<b>Hazard statements</b>	H315 - Causes skin irritation. H319 - Causes serious eye irritation. H360FD - May damage fertility. May damage the unborn child.

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## SECTION 2: Hazards identification

### Precautionary statements

<b>Prevention</b>	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. P264 - Wash hands thoroughly after handling.
<b>Response</b>	P308 + P313 - IF exposed or concerned: Get medical attention. P362 + P364 - Take off contaminated clothing and wash it before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. 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 attention.
<b>Storage</b>	Not applicable.
<b>Disposal</b>	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
<b>Hazardous ingredients</b>	Boric acid
<b>Supplemental label elements</b>	Not applicable.

### EU Regulation (EC) No. 1907/2006 (REACH)

<b>Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles</b>	Restricted to professional users.
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### Special packaging requirements

<b>Containers to be fitted with child-resistant fastenings</b>	Not applicable.
<b>Tactile warning of danger</b>	Not applicable.

### 2.3 Other hazards

<b>Results of PBT and vPvB assessment</b>	Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.
<b>Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII</b>	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
<b>Other hazards which do not result in classification</b>	Defatting to the skin. This product contains complex ionic mixtures within the fluid matrix which are an intrinsic part of the product and cannot be separated from the fluid matrix. Toxicology testing has shown the ionic-mixture containing products exhibit skin and eye irritation properties that are notably attenuated when compared to the individual acid and base components.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

**Product definition** Mixture  
Corrosion inhibitors and additives in aqueous solution.

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
3,5,5-trimethylhexanoic acid	REACH #: 01-2119517580-45 EC: 221-975-0 CAS: 3302-10-1	≥10 - ≤25	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318	ATE [Oral] = 500 mg/kg	[1]
2-aminoethanol	REACH #: 01-2119486455-28 EC: 205-483-3 CAS: 141-43-5 Index: 603-030-00-8	≤10	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Chronic 3, H412	ATE [Oral] = 500 mg/kg ATE [Dermal] = 1100 mg/kg ATE [Inhalation (vapours)] = 11 mg/l STOT SE 3, H335: C ≥ 5%	[1] [2]
Boric acid	REACH #:	≤5	Repr. 1B, H360FD	-	[1]

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**SECTION 3: Composition/information on ingredients**

4-Octanol, 3-amino-	01-2119486683-25 EC: 233-139-2 CAS: 10043-35-3 Index: 005-007-00-2 REACH #:	≤3	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318	ATE [Oral] = 500 mg/ [1] kg
carbonic acid, compound with 2-aminoethanol (1:2)	01-2119387550-36 CAS: 1001354-72-8 REACH #:	≤3	Acute Tox. 4, H302	ATE [Oral] = 500 mg/ [1] kg
sodium 4(or 5)-methyl-1H-benzotriazolide	01-2119976326-28 EC: 244-600-2 CAS: 21829-52-7 REACH #:	≤0.3	Acute Tox. 4, H302 Skin Corr. 1B, H314 Eye Dam. 1, H318 Repr. 2, H361d Aquatic Chronic 2, H411	ATE [Oral] = 500 mg/ [1] kg
3-Iodo-2-propynyl butylcarbamate	01-2119980062-42 EC: 265-004-9 CAS: 64665-57-2 Index: 616-212-00-7	<0.1	Acute Tox. 4, H302 Acute Tox. 3, H331 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT RE 1, H372 (larynx) Aquatic Acute 1, H400 Aquatic Chronic 1, H410	ATE [Oral] = 500 mg/ [1] kg ATE [Inhalation (vapours)] = 3 mg/l M [Acute] = 10 M [Chronic] = 1

See Section 16 for the full text of the H statements declared above.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in Section 8.

**SECTION 4: First aid measures**

**4.1 Description of first aid measures**

**Eye contact**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

**Skin contact**

Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention.

**Inhalation**

If inhaled, remove to fresh air. Get medical attention immediately. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Ingestion**

Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Wash out mouth with water if person is conscious. Get medical attention immediately.

**Protection of first-aiders**

No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11 for more detailed information on health effects and symptoms.

**Potential acute health effects**

**Inhalation**

Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Ingestion**

Irritating to mouth, throat and stomach.

**Skin contact**

Causes skin irritation. Defatting to the skin.

**Eye contact**

Causes serious eye irritation.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Inhalation**

Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.

**Ingestion**

Ingestion of large quantities may cause nausea and diarrhoea.

**Skin contact**

Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.

**Eye contact**

Potential risk of transient stinging or redness if accidental eye contact occurs.

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## SECTION 4: First aid measures

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

#### Notes to physician

Treatment should in general be symptomatic and directed to relieving any effects.  
In case of inhalation of decomposition products in a fire, symptoms may be delayed.  
The exposed person may need to be kept under medical surveillance for 48 hours.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

In case of fire, use water fog, alcohol resistant foam, dry chemical or carbon dioxide extinguisher or spray.

#### Unsuitable extinguishing media

Do not use water jet. The use of a water jet may cause the fire to spread by splashing the burning product.

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

#### Hazards from the substance or mixture

In a fire or if heated, a pressure increase will occur and the container may burst.

#### Hazardous combustion products

Combustion products may include the following:  
carbon oxides (CO, CO<sub>2</sub>) (carbon monoxide, carbon dioxide)  
nitrogen oxides (NO, NO<sub>2</sub> etc.)

### 5.3 Advice for firefighters

#### Special precautions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

#### Special protective equipment for fire-fighters

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

## SECTION 6: Accidental release measures

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

#### For non-emergency personnel

Contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Floors may be slippery; use care to avoid falling. Avoid breathing vapour or mist. Provide adequate ventilation. Put on appropriate personal protective equipment.

#### For emergency responders

Entry into a confined space or poorly ventilated area contaminated with vapour, mist or fume is extremely hazardous without the correct respiratory protective equipment and a safe system of work. Wear self-contained breathing apparatus. Wear a suitable chemical protective suit. Chemical resistant boots. See also the information in "For non-emergency personnel".

### 6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

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

#### Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

#### Large spill

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product. Dispose of via a licensed waste disposal contractor.

### 6.4 Reference to other sections

See Section 1 for emergency contact information.  
See Section 5 for firefighting measures.  
See Section 8 for information on appropriate personal protective equipment.  
See Section 12 for environmental precautions.  
See Section 13 for additional waste treatment information.

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## SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 7.1 Precautions for safe handling

**Protective measures**

Put on appropriate personal protective equipment. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid contact of spilt material and runoff with soil and surface waterways. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Do not reuse container. Empty containers retain product residue and can be hazardous. Avoid prolonged or repeated contact with skin. During metal working, solid particles from workpieces or tools will contaminate the fluid and may cause abrasions of the skin. Where such abrasions result in a penetration of the skin, first aid treatment should be applied as soon as reasonably possible. The presence of certain metals in the workpiece or tool, such as chromium, cobalt and nickel, can contaminate the metalworking fluid and as a result may induce allergic skin reactions. Evaporation of water from soluble cutting fluids during use may lead to an increase in concentration which may result in the development of skin conditions due to irritation and defatting. It is important to monitor fluid strength on a regular basis with a refractometer and maintain it at the recommended concentration. Lubricants from other sources and other contaminants should be minimised. Swarf and other debris should be removed.

**Advice on general occupational hygiene**

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

Store between the following temperatures: 5 to 40°C (41 to 104°F). Store in accordance with local regulations. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Protect from freezing. Store locked up. Keep away from heat and direct sunlight. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store and use only in equipment/containers designed for use with this product. Do not store in unlabelled containers.

### 7.3 Specific end use(s)

**Recommendations**

See section 1.2 and Exposure scenarios in annex, if applicable.

## SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 8.1 Control parameters

**Occupational exposure limits**

No exposure limit value known.

Product/ingredient name	Exposure limit values
<p>Whilst specific OELs for certain components may be shown in this section, other components may be present in any mist, vapour or dust produced. Therefore, the specific OELs may not be applicable to the product as a whole and are provided for guidance only.</p>	
<p><b>Recommended monitoring procedures</b></p>	<p>Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.</p>
<p><b>Derived No Effect Level</b> No DNELs/DMELs available.</p>	
<p><b>Predicted No Effect Concentration</b> No PNECs available</p>	

### 8.2 Exposure controls

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**SECTION 8: Exposure controls/personal protection**

**Appropriate engineering controls**

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

**Individual protection measures**

**Hygiene measures**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

**Respiratory protection**

In case of insufficient ventilation, wear suitable respiratory equipment. For protection against metal working fluids, respiratory protection that is classified as “resistant to oil” (class R) or oil proof (class P) should be selected where appropriate. Depending on the level of airborne contaminants, an air-purifying, half-mask respirator (with HEPA filter) including disposable (P- or R-series) (for oil mists less than 50mg/m3), or any powered, air-purifying respirator equipped with hood or helmet and HEPA filter (for oil mists less than 125 mg/m3). Where organic vapours are a potential hazard during metalworking operations, a combination particulate and organic vapour filter may be necessary. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

**Eye/face protection**

Safety glasses with side shields.

**Skin protection**

**Hand protection**

**General Information:**

Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures).

Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions.

Wear suitable gloves.  
Recommended: Nitrile gloves.

**Breakthrough time:**

Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type. Our recommendations on the selection of gloves are as follows:

Continuous contact:

Gloves with a minimum breakthrough time of 240 minutes, or >480 minutes if suitable gloves can be obtained.

If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.

Short-term / splash protection:

Recommended breakthrough times as above.

It is recognised that for short-term, transient exposures, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

**Glove Thickness:**

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## SECTION 8: Exposure controls/personal protection

For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.

It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.

Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential.

### Skin and body

Use of protective clothing is good industrial practice. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

### Refer to standards:

Respiratory protection: EN 529  
 Gloves: EN 420, EN 374  
 Eye protection: EN 166  
 Filtering half-mask: EN 149  
 Filtering half-mask with valve: EN 405  
 Half-mask: EN 140 plus filter  
 Full-face mask: EN 136 plus filter  
 Particulate filters: EN 143  
 Gas/combined filters: EN 14387

### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

## SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

### 9.1 Information on basic physical and chemical properties

<b>Physical state</b>	Liquid.
<b>Colour</b>	Yellow. [Light]
<b>Odour</b>	Not available.
<b>Odour threshold</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	>100°C (>212°F)
<b>Flammability</b>	Not available.
<b>Lower and upper explosion limit</b>	Not available.
<b>Flash point</b>	Closed cup: >100°C (>212°F) [Estimated. Water content interferes with flash point determination.]

### Auto-ignition temperature

Ingredient name	°C	°F	Method
2,2',2"-nitrotriethanol	324	615.2	
2-aminoethanol	410	770	

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## SECTION 9: Physical and chemical properties

**Decomposition temperature** Not available.  
**pH** 9.2 [Conc. (% w/w): 4%]  
**Kinematic viscosity** Not available.  
**Solubility**

Media	Result
water	Soluble

**Partition coefficient n-octanol/water (log value)** Not applicable.

**Vapour pressure**

Ingredient name	Vapour Pressure at 20°C		Vapour pressure at 50°C			
	mm Hg	kPa	Method	mm Hg	kPa	Method
Water	23.8	3.2				
2,2',2"-nitrilotriethanol	<0.0075	<0.001				
2-aminoethanol	0.4	0.053				
Boric acid	0.00000074	0.000000099	EU A.4			
4-Octanol, 3-amino-	0.021	0.0028	EU A.4			

**Density and/or Relative density** >1000 kg/m<sup>3</sup> (>1 g/cm<sup>3</sup>) at 15°C

**Relative vapour density** Not available.

**Particle characteristics**

**Median particle size** Not applicable.

**9.2 Other information**

**Evaporation rate** Not available.

**Explosive properties** Not available.

**Oxidising properties** Not available.

## SECTION 10: Stability and reactivity

**10.1 Reactivity** No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.

**10.2 Chemical stability** The product is stable.

**10.3 Possibility of hazardous reactions** Under normal conditions of storage and use, hazardous reactions will not occur.  
Under normal conditions of storage and use, hazardous polymerisation will not occur.

**10.4 Conditions to avoid** High temperatures

**10.5 Incompatible materials** Reactive or incompatible with the following materials: oxidising materials.  
Slightly reactive or incompatible with the following materials: acids.

**10.6 Hazardous decomposition products** Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

**11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**

### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Iloform RS 5116	N/A	16339.1	N/A	163.4	N/A
3,5,5-trimethylhexanoic acid	500	N/A	N/A	N/A	N/A
2-aminoethanol	500	1100	N/A	11	N/A
4-Octanol, 3-amino-	500	N/A	N/A	N/A	N/A
Amine carbamate	500	N/A	N/A	N/A	N/A
sodium 4(or 5)-methyl-1H-benzotriazolide	500	N/A	N/A	N/A	N/A
3-Iodo-2-propynyl butylcarbamate	500	N/A	N/A	3	N/A

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**SECTION 11: Toxicological information**

**Information on likely routes of exposure** Routes of entry anticipated: Dermal, Inhalation, Eyes.

**Potential acute health effects**

- Inhalation** Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Ingestion** Irritating to mouth, throat and stomach.
- Skin contact** Causes skin irritation. Defatting to the skin.
- Eye contact** Causes serious eye irritation.

**Symptoms related to the physical, chemical and toxicological characteristics**

- Inhalation** No specific data.
- Ingestion** No specific data.
- Skin contact** Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- Eye contact** Adverse symptoms may include the following:  
pain or irritation  
watering  
redness

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

- Inhalation** Overexposure to the inhalation of airborne droplets or aerosols may cause irritation of the respiratory tract.
- Ingestion** Ingestion of large quantities may cause nausea and diarrhoea.
- Skin contact** Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis.
- Eye contact** Potential risk of transient stinging or redness if accidental eye contact occurs.

**Potential chronic health effects**

- General** No known significant effects or critical hazards.
- Carcinogenicity** No known significant effects or critical hazards.
- Mutagenicity** No known significant effects or critical hazards.
- Developmental effects** May damage the unborn child.
- Fertility effects** May damage fertility.

**11.2 Information on other hazards**

**11.2.1 Endocrine disrupting properties**

Not available.

**Remarks - Endocrine disruptor - Health** Not available.

**11.2.2 Other information**

Not available.

**SECTION 12: Ecological information**

**12.1 Toxicity**

**Environmental hazards** Not classified as dangerous

**12.2 Persistence and degradability**

Expected to be biodegradable.

**12.3 Bioaccumulative potential**

Not available.

**12.4 Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** Not available.

**Mobility** Liquid. Soluble in water.

**12.5 Results of PBT and vPvB assessment**

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## SECTION 12: Ecological information

Product does not meet the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.

<b>12.6 Endocrine disrupting properties</b>	Not available.
<b>Remarks - Endocrine disruptor - Environment</b>	Not available.
<b>12.7 Other adverse effects</b>	No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

### 13.1 Waste treatment methods

#### Product

<b>Methods of disposal</b>	Undiluted fluid Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations. Diluted Fluid The spent diluted fluid comprises a relatively stable emulsion. Dispose of via an authorised person/ licensed waste disposal contractor or by other suitable waste treatment techniques (e.g. emulsion splitting, coagulation and filtration) approved by the local authority. Spent fluid should never be disposed of down the drain. The aqueous phase should not be discharged into sewage systems unless provided for by local regulations; the non-aqueous phase should be disposed of as undiluted fluid. Note that separated aqueous solutions or effluents may contain metal salts as well as traces of oil and must be checked for conformity in these respects against consents given by the authorities before disposal. Further treatment may be required.
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**Hazardous waste** Yes.

#### European waste catalogue (EWC)

Waste code	Waste designation
12 01 10*	synthetic machining oils
12 01 09*	machining emulsions and solutions free of halogens

However, deviation from the intended use and/or the presence of any potential contaminants may require an alternative waste disposal code to be assigned by the end user.

#### Packaging

<b>Methods of disposal</b>	Where possible, arrange for product to be recycled. Dispose of via an authorised person/ licensed waste disposal contractor in accordance with local regulations.
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Waste code	European waste catalogue (EWC)
15 01 10*	packaging containing residues of or contaminated by hazardous substances

**Special precautions** This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Empty containers represent a fire hazard as they may contain flammable product residues and vapour. Never weld, solder or braze empty containers. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

**References** Commission 2014/955/EU  
Directive 2008/98/EC

## SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
<b>14.1 UN number or ID number</b>	Not regulated.	Not regulated.	Not regulated.	Not regulated.
<b>14.2 UN proper shipping name</b>	-	-	-	-
<b>14.3 Transport hazard class(es)</b>	-	-	-	-
<b>14.4 Packing group</b>	-	-	-	-
<b>14.5 Environmental hazards</b>	No.	No.	No.	No.

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**SECTION 14: Transport information**

<b>Additional information</b>	-	-	-	-
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**14.6 Special precautions for user** Not available.

**14.7 Maritime transport in bulk according to IMO instruments** Not available.

**SECTION 15: Regulatory information**

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

<b>Ingredient name</b>	<b>Intrinsic property</b>	<b>Status</b>	<b>Reference number</b>	<b>Date of revision</b>
boric acid	Toxic to reproduction	Recommended	ED/69/2013	7/1/2015

EU Regulation (EC) No. 1907/2006 (REACH)

**Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles** Restricted to professional users.

Other regulations

**REACH Status** The company, as identified in Section 1, sells this product in the EU in compliance with the current requirements of REACH.

**United States inventory (TSCA 8b)** All components are active or exempted.

**Australia inventory (AIC)** At least one component is not listed.

**Canada inventory** At least one component is not listed in DSL but all such components are listed in NDSL.

**China inventory (IECSC)** All components are listed or exempted.

**Japan inventory (CSCL)** At least one component is not listed.

**Korea inventory (KECI)** All components are listed or exempted.

**Philippines inventory (PICCS)** At least one component is not listed.

**Taiwan Chemical Substances Inventory (TCSI)** All components are listed or exempted.

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Persistent Organic Pollutants

Not listed.

EU - Water framework directive - Priority substances

None of the components are listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

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**SECTION 15: Regulatory information**

**15.2 Chemical safety assessment**

A Chemical Safety Assessment has been carried out for one or more of the substances within this mixture. A Chemical Safety Assessment has not been carried out for the mixture itself.

**SECTION 16: Other information**

**Abbreviations and acronyms**

ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway  
 ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road  
 ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 CAS = Chemical Abstracts Service  
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]  
 CSA = Chemical Safety Assessment  
 CSR = Chemical Safety Report  
 DMEL = Derived Minimal Effect Level  
 DNEL = Derived No Effect Level  
 EINECS = European Inventory of Existing Commercial chemical Substances  
 ES = Exposure Scenario  
 EUH statement = CLP-specific Hazard statement  
 EWC = European Waste Catalogue  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 OECD = Organisation for Economic Co-operation and Development  
 PBT = Persistent, Bioaccumulative and Toxic  
 PNEC = Predicted No Effect Concentration  
 REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]  
 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail  
 RRN = REACH Registration Number  
 SADT = Self-Accelerating Decomposition Temperature  
 SVHC = Substances of Very High Concern  
 STOT-RE = Specific Target Organ Toxicity - Repeated Exposure  
 STOT-SE = Specific Target Organ Toxicity - Single Exposure  
 TWA = Time weighted average  
 UN = United Nations  
 UVCB = Complex hydrocarbon substance  
 VOC = Volatile Organic Compound  
 vPvB = Very Persistent and Very Bioaccumulative  
 Varies = may contain one or more of the following 64741-88-4 / RRN 01-2119488706-23, 64741-89-5 / RRN 01-2119487067-30, 64741-95-3 / RRN 01-2119487081-40, 64741-96-4/ RRN 01-2119483621-38, 64742-01-4 / RRN 01-2119488707-21, 64742-44-5 / RRN 01-2119985177-24, 64742-45-6, 64742-52-5 / RRN 01-2119467170-45, 64742-53-6 / RRN 01-2119480375-34, 64742-54-7 / RRN 01-2119484627-25, 64742-55-8 / RRN 01-2119487077-29, 64742-56-9 / RRN 01-2119480132-48, 64742-57-0 / RRN 01-2119489287-22, 64742-58-1, 64742-62-7 / RRN 01-2119480472-38, 64742-63-8, 64742-65-0 / RRN 01-2119471299-27, 64742-70-7 / RRN 01-2119487080-42, 72623-85-9 / RRN 01-2119555262-43, 72623-86-0 / RRN 01-2119474878-16, 72623-87-1 / RRN 01-2119474889-13

**Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]**

Classification	Justification
Skin Irrit. 2, H315	Expert judgment
Eye Irrit. 2, H319	Expert judgment
Repr. 1B, H360FD	Calculation method

**Full text of abbreviated H statements**

H220 Extremely flammable gas.  
 H225 Highly flammable liquid and vapour.  
 H230 May react explosively even in the absence of air.  
 H280 Contains gas under pressure; may explode if heated.  
 H301 Toxic if swallowed.  
 H302 Harmful if swallowed.  
 H304 May be fatal if swallowed and enters airways.  
 H312 Harmful in contact with skin.  
 H314 Causes severe skin burns and eye damage.

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**SECTION 16: Other information**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H340	May cause genetic defects.
H350	May cause cancer.
H360FD	May damage fertility. May damage the unborn child.
H360Fd	May damage fertility. Suspected of damaging the unborn child.
H361d	Suspected of damaging 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.
H412	Harmful to aquatic life with long lasting effects.
Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Asp. Tox. 1	ASPIRATION HAZARD - Category 1
Carc. 1B	CARCINOGENICITY - Category 1B
Chem. Unst. Gas A	CHEMICALLY UNSTABLE GASES - Category A
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Flam. Gas 1A	FLAMMABLE GASES - Category 1A
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Muta. 1B	GERM CELL MUTAGENICITY - Category 1B
Press. Gas (Comp.)	GASES UNDER PRESSURE - Compressed gas
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Repr. 2	REPRODUCTIVE TOXICITY - Category 2
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

**Full text of classifications [CLP/GHS]**

**History**

<b>Date of issue/ Date of revision</b>	11/09/2023.
<b>Date of previous issue</b>	12/06/2023.
<b>Prepared by</b>	Product Stewardship

 **Indicates information that has changed from previously issued version.**

**Notice to reader**

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## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

<b>Product definition</b>	Mixture
<b>Code</b>	455427-FR01
<b>Product name</b>	Iloform RS 5116

### Section 1: Title

<b>Short title of the exposure scenario</b>	Handling and dilution of metal working fluid concentrates - Industrial
<b>List of use descriptors</b>	<p><b>Identified use name:</b> Handling and dilution of metal working fluid concentrates-Industrial</p> <p><b>Process Category:</b> PROC01, PROC02, PROC08b, PROC05</p> <p><b>Sector of end use:</b> SU03</p> <p><b>Subsequent service life relevant for that use:</b> No.</p> <p><b>Environmental Release Category:</b> ERC02</p> <p><b>Specific Environmental Release Category:</b> ATIEL-ATC SPERC 2.Ei.v1</p>

<b>Processes and activities covered by the exposure scenario</b>	Handling and dilution of metal working fluid concentrates. Includes associated product storage, material transfers, sampling and maintenance activities.
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### Section 2 Operational conditions and risk management measures

#### Section 2.1 Control of worker exposure

##### Product characteristics:

<b>Physical state:</b>	Liquid, vapour pressure < 0.5 kPa
<b>Concentration of substance in product:</b>	Covers use of substance/product up to 100 % (unless stated differently)
<b>Frequency and duration of use:</b>	Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure:</b>	Assumes use at not more than 20°C above ambient temperature. Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios: Operational conditions and risk management measures

General measures (carcinogens):

Consider technical advances and process upgrades (including automation) for the elimination of releases.  
Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation.

Drain down systems and clear transfer lines prior to breaking containment.  
Clean/flush equipment, where possible, prior to maintenance.

Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.

Ensure safe systems of work or equivalent arrangements are in place to manage risks.

Regularly inspect, test and maintain all control measures.

Consider the need for risk-based health surveillance.

General measures applicable to all activities:

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product also via contamination on hands.

Filling of equipment from drums or containers:

Avoid carrying out activities involving exposure for more than 4 hours per day.

Process sampling:

Avoid carrying out activities involving exposure for more than 4 hours per day.

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**Handling and dilution of metal working fluid concentrates - Industrial**



**Equipment cleaning and maintenance:**

Drain down system prior to equipment break-in or maintenance. Avoid carrying out activities involving exposure for more than 4 hours per day. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

**Storage:**

Store substance within a closed system.

**Section 2.2: Control of environmental exposure**

No exposure scenario is presented because the product is not classified for the Environment

**Section 3: Exposure estimation and reference to its source**

**Exposure estimation and reference to its source - Environment**

**Exposure assessment (environment):**

No exposure scenario is presented because the product is not classified for the Environment

**Exposure estimation and reference to its source - Workers**

**Exposure assessment (human):**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

**Section 4: Guidance to check compliance with the exposure scenario**

**Environment**

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see [www.ATIEL.org/REACH\\_GES](http://www.ATIEL.org/REACH_GES)

**Health**

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

## Annex to the extended Safety Data Sheet (eSDS)

Industrial

### Identification of the substance or mixture

<b>Product definition</b>	Mixture
<b>Code</b>	455427-FR01
<b>Product name</b>	Iloform RS 5116

### Section 1: Title

<b>Short title of the exposure scenario</b>	Use of lubricants in high energy open processes - Industrial
<b>List of use descriptors</b>	<p><b>Identified use name:</b> Use of lubricants in high energy open processes-Industrial</p> <p><b>Process Category:</b> PROC01, PROC02, PROC08b, PROC17</p> <p><b>Sector of end use:</b> SU03</p> <p><b>Subsequent service life relevant for that use:</b> No.</p> <p><b>Environmental Release Category:</b> ERC04</p> <p><b>Specific Environmental Release Category:</b> ATIEL-ATC SPERC 4.Fi.v1</p>

<b>Processes and activities covered by the exposure scenario</b>	Covers use of lubricants in high energy open processes, e.g. In high speed machinery such as metal rolling/forming or metal working fluids for machining and grinding. Includes associated product storage, material transfers, sampling and maintenance activities.
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### Section 2 Operational conditions and risk management measures

#### Section 2.1 Control of worker exposure

##### Product characteristics:

<b>Physical state:</b>	Liquid, vapour pressure < 0.5 kPa
<b>Concentration of substance in product:</b>	Covers use of substance/product up to 100 % (unless stated differently)
<b>Frequency and duration of use:</b>	Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure:</b>	Assumes use at not more than 20°C above ambient temperature. Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios: Operational conditions and risk management measures

General measures (carcinogens):

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation.

Drain down systems and clear transfer lines prior to breaking containment.

Clean/flush equipment, where possible, prior to maintenance.

Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.

Ensure safe systems of work or equivalent arrangements are in place to manage risks.

Regularly inspect, test and maintain all control measures.

Consider the need for risk-based health surveillance.

General measures applicable to all activities:

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product also via contamination on hands.

Filling of equipment from drums or containers:

No specific measures identified.

Metal machining operations:

Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.

Operation and lubrication of high energy open equipment:  
Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

Automated metal rolling/forming Use in contained systems Operation is carried out at elevated temperature (> 20°C above ambient temperature):  
No other specific measures identified.

Semi-automated metal rolling/forming Open systems Operation is carried out at elevated temperature (> 20°C above ambient temperature):  
Provide extract ventilation to points where emissions occur.

Equipment cleaning and maintenance:  
Drain down system prior to equipment break-in or maintenance. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Retain drain-downs in sealed storage pending disposal or for subsequent recycle.  
Storage:  
Store substance within a closed system.

## Section 2.2: Control of environmental exposure

No exposure scenario is presented because the product is not classified for the Environment

## Section 3: Exposure estimation and reference to its source

### Exposure estimation and reference to its source - Environment

**Exposure assessment (environment):** Used ECETOC TRA model (May 2010 release).

### Exposure estimation and reference to its source - Workers

**Exposure assessment (human):** The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

## Section 4: Guidance to check compliance with the exposure scenario

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see [www.ATIEL.org/REACH\\_GES](http://www.ATIEL.org/REACH_GES)

### Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

## Annex to the extended Safety Data Sheet (eSDS)

Professional

### Identification of the substance or mixture

<b>Product definition</b>	Mixture
<b>Code</b>	455427-FR01
<b>Product name</b>	Iloform RS 5116

### Section 1: Title

<b>Short title of the exposure scenario</b>	Use of lubricants in high energy open processes - Professional
<b>List of use descriptors</b>	<p><b>Identified use name:</b> Use of lubricants in high energy open processes-Professional</p> <p><b>Process Category:</b> PROC01, PROC02, PROC08a, PROC17</p> <p><b>Sector of end use:</b> SU22</p> <p><b>Subsequent service life relevant for that use:</b> No.</p> <p><b>Environmental Release Category:</b> ERC08a</p> <p><b>Specific Environmental Release Category:</b> ATIEL-ATC SpERC 8.7c.v1</p>

<b>Processes and activities covered by the exposure scenario</b>	Covers use of lubricants in high energy open processes, e.g. In high speed machinery such as metal rolling/forming or metal working fluids for machining and grinding. Includes associated product storage, material transfers, sampling and maintenance activities.
--	--

### Section 2 Operational conditions and risk management measures

#### Section 2.1 Control of worker exposure

##### Product characteristics:

<b>Physical state:</b>	Liquid, vapour pressure < 0.5 kPa
<b>Concentration of substance in product:</b>	Covers use of substance/product up to 100 % (unless stated differently)
<b>Frequency and duration of use:</b>	Covers daily exposures up to 8 hours
<b>Other conditions affecting workers exposure:</b>	Assumes use at not more than 20°C above ambient temperature. Assumes a good basic standard of occupational hygiene is implemented

#### Contributing scenarios: Operational conditions and risk management measures

General measures (carcinogens):

Consider technical advances and process upgrades (including automation) for the elimination of releases. Minimise exposure using measures such as closed systems, dedicated facilities and suitable general/local exhaust ventilation.

Drain down systems and clear transfer lines prior to breaking containment.

Clean/flush equipment, where possible, prior to maintenance.

Where there is potential for exposure: restrict access to authorised persons; provide specific activity training to operators to minimise exposures; wear suitable gloves and coveralls to prevent skin contamination; wear respiratory protection when its use is identified for certain contributing scenarios; clear up spills immediately and dispose of wastes safely.

Ensure safe systems of work or equivalent arrangements are in place to manage risks.

Regularly inspect, test and maintain all control measures.

Consider the need for risk-based health surveillance.

General measures applicable to all activities:

Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN 374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent/minimise exposures and to report any skin problems that may develop. Use suitable eye protection. Avoid direct eye contact with product also via contamination on hands.

Filling of equipment from drums or containers:

Avoid carrying out activities involving exposure for more than 1 hour per day.

Metal machining operations:

Provide extract ventilation to points where emissions occur.

**Iloform RS 5116**

**Use of lubricants in high energy open processes - Professional**

Operation and lubrication of high energy open equipment:

Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours per day. Wear a respirator conforming to EN140 with type A filter or better. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Equipment cleaning and maintenance:

Drain down system prior to equipment break-in or maintenance. Natural ventilation is from doors, windows etc. Controlled ventilation means air is supplied or removed by a powered fan. Avoid carrying out activities involving exposure for more than 4 hours per day. Wear a respirator conforming to EN140 with type A filter or better. Retain drain-downs in sealed storage pending disposal or for subsequent recycle.

Storage:

Store substance within a closed system.

## Section 2.2: Control of environmental exposure

No exposure scenario is presented because the product is not classified for the Environment

## Section 3: Exposure estimation and reference to its source

### Exposure estimation and reference to its source - Environment

**Exposure assessment (environment):**

No exposure scenario is presented because the product is not classified for the Environment

### Exposure estimation and reference to its source - Workers

**Exposure assessment (human):**

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

## Section 4: Guidance to check compliance with the exposure scenario

### Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Further details on scaling and control technologies are provided in SPERC factsheet. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For further information see [www.ATIEL.org/REACH\\_GES](http://www.ATIEL.org/REACH_GES)

### Health

Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.