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## 1. IDENTIFICATION OF THE SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING

1.1	<b>IDENTIFICATION OF THE SUBSTANCE OR PREPARATION</b>	Iron-II-Chloride  Identification on the label / trade name <b>Nanofloc/CC Flocc 77</b>
1.2	<b>USE OF THE SUBSTANCE / PREPARATION</b>	Precipitant / Agglomerating Agent  Uses advised against Any other use
1.3	<b>COMPANY/UNDERTAKING IDENTIFICATION</b>	Clinty Chemicals Ltd 215 Doury Road Ballymena Co. Antrim Northern Ireland BT43 6SS  E-mail info@clintychemicals.co.uk
1.4	<b>EMERGENCY TELEPHONE</b>	028 2564 1618

## 2. HAZARDS IDENTIFICATION

### 2.1 CLASSIFICATION

#### 2.1.1 Classification according to Directive 67/548/EEC or 1999/45 as amended

Classification	Category	Risk Phrases
C Corrosive	-	R34 Causes burns
X <sub>n</sub> Harmful	-	R22 Harmful if swallowed

#### 2.1.2 Classification according to Regulation (EC) No 1272/2008 as amended

Classification	Category	Hazard Statement
<b>Physical Hazard</b> Corrosive to metals	Category 1	H290 May be corrosive to metals
<b>Health Hazard</b> Eye Effects	Category 1	H318 Causes serious eye damage
<b>Health Hazard</b> Skin Irritant	Category 2	H315 Causes skin irritation
<b>Health Hazard</b> Acute Toxicity	Category 4	H302 Harmful if swallowed

### 2.2 LABEL ELEMENTS



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### 2.1.1 Labelling according to Regulation (EC) No 1272/2008 as amended

#### Contains

Iron-II-Chloride

#### Hazard Pictograms



#### Signal Word

Danger

#### Hazard Statements

H290 May be corrosive to metals  
 H302 Harmful if swallowed  
 H315 Causes skin irritation  
 H318 Causes serious eye damage

#### Precautionary Statements

##### Prevention

P234 Keep only in original container  
 P264 Wash skin thoroughly after handling  
 P270 Do not eat, drink or smoke when using this product  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection

##### Response

P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
 P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.  
 P310 Immediately call a POISON CENTRE/doctor  
 P302 + P352 IF ON SKIN: Wash with plenty of soap and water  
 P332 + P313 If skin irritation occurs: Get medical advice / attention.  
 P390 Absorb spillage to prevent material damage

##### Storage

P406 Store in corrosive resistant container with a resistant inner liner

##### Disposal

P501 Dispose of contents/container in accordance with local regulation

#### Hazardous Components

7758-94-3 Iron-II-Chloride

#### Further information

The product is classified and labeled in accordance with EC directives or respective national laws



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**Other hazards**

Hazardous decomposition products: Hydrogen chloride (HCl), Carbon monoxide (CO), Carbon Dioxide (CO<sub>2</sub>), Nitrogen Oxides (NO<sub>x</sub>)

**3. COMPOSITION / INFORMATION ON INGREDIENTS****3.1 PREPARATION / MIXTURE RELATED INFORMATION****Description**

Iron-II-Chloride

**Hazardous Ingredients**

Chemical Name	EC No / REACH Registration Number	CAS No	Amount (%)	Classification according to Regulation (EC) No 1272/2008 – CLP		Classification according to 67/548/EEC or 1999/45/EC
				Hazard Class / Hazard Category	Hazard Symbol	
Iron-II-Chloride	231-843-4 / 01-2119498060-41	7758-94-3	<35%	Acute Tox. Category 4 H302 Eye Dam. Category 1 H318 Skin Irrit. Category 2		X <sub>n</sub> R22 X <sub>i</sub> R38 R41

**Composition comments**

The full text for all R- and H-phrases is displayed in section 16

**4. FIRST AID MEASURES****4.1 GENERAL INFORMATION**

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

**4.2 DESCRIPTION OF FIRST AID MEASURES****IN CASE OF INHALATION**

P304 IF INHALED: Move to fresh air  
- Call a physician if symptoms develop or persist

**IN CASE OF SKIN CONTACT**

P361 Remove/Take off immediately all contaminated clothing.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.



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P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

**IN CASE OF EYE CONTACT**

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- If possible use lukewarm water. Consult a physician. Do not rub the eyes as this can cause mechanical irritation. Continue rinsing eyes during transport to hospital

**IN CASE OF INGESTION**

P301 + P330 + P331 IF SWALLOWED: rinse mouth immediately with water. Do NOT induce vomiting.

- Drink plenty of water.

- Never give anything by mouth to an unconscious person or a person with cramps.

- Call a physician immediately.

**4.3 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED** Corrosive effects.

**4.4 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED** Treat symptomatically

**5. FIRE FIGHTING MEASURES**

**5.1 SUITABLE EXTINGUISHING MEDIA** Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**5.2 EXTINGUISHING MEDIA WHICH MUST NOT BE USED FOR SAFETY REASONS** None known

**5.3 SPECIAL EXPOSURE HAZARDS ARISING FROM THE SUBSTANCE OR PREPARATION ITSELF, COMBUSTION PRODUCTS, RESULTING GASES** In case of fire the following may be liberated: Carbon Monoxide (CO), Carbon Dioxide (CO<sub>2</sub>), Hydrogen Chloride (HCl), Nitrogen Oxides (NO<sub>x</sub>).

**5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS** Wear self-contained breathing apparatus and chemical protective clothing. Full protective suit.

**6. ACCIDENTAL RELEASE MEASURES**

**6.1 PERSONAL PRECAUTIONS**



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- P280 Wear suitable protective gloves/protective clothing/eye protection/face protection  
Provide adequate ventilation. Do not breath gas/fumes/vapour or spray. Avoid contact with skin, eyes and clothes.
- P308/P313 If exposed or concerned: get medical advice/attention

## 6.2 ENVIRONMENTAL PRECAUTIONS

Do not allow to enter into surface water or drains. Protect drains from potential spills to minimize contamination. Do not wash product into drainage system. Contact the appropriate authorities in all cases where the consequences cannot be quickly and effectively controlled.

## 6.3 METHODS FOR CLEANING UP

In case of spill, stop the source of the leak or release  
Contain and recover spilled material using sand or other suitable inert absorbent material.  
Sweep up and place in a disposable container. Must be disposed of in accordance with local and national regulations

Special Danger of slipping by leaking / spilling product.

It is advised that stocks of suitable absorbent material should be held in quantities sufficient to deal with any spillage which may be reasonably anticipated.

## 7. HANDLING & STORAGE

### 7.1 HANDLING

#### 7.1.1 Safe handling: Protective measures

Avoid contact with eyes. If splashing is likely to occur wear a full face visor or chemical goggles as appropriate. If skin contact is likely, wear impervious protective clothing and gloves. High standards of personal hygiene and plant cleanliness must be maintained. Wash hands thoroughly after use, and always wash hands before eating, drinking and smoking and before and after using the toilet. Change heavily contaminated clothing as soon as reasonably practicable and launder before re-use. Wash any contaminated underlying skin with soap and water.

Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.

If handled uncovered, arrangements with local exhaust ventilation have to be used.

Do not breath gas / fumes / vapour or spray.

#### 7.1.2 Safe handling: Technical measures

Danger for slipping. The work place and work methods shall be organized in such a way that direct contact with the product is prevented or minimized. For personal protection see section 8.

#### 7.1.3 Safe handling: Measures to protect the environment



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The design, construction and maintenance of bulk storage and handling facilities are covered by codes of the practice published by the Health and Safety Executive and the Environment Agency.

#### 7.1.4 Safe handling: Precautions against fire and explosion

No special measures are necessary.

#### 7.2 STORAGE

P102 Keep out of reach of children  
 P233 Keep container tightly closed  
 P234 Keep only in original container

##### 7.2.1 Technical measures and storage conditions

Keep away from incompatible materials.

##### 7.2.2 Packaging materials

Suitable material: Acid proof (PE, PP, PVC). Unsuitable materials: All metals.

##### 7.3.3 Requirements for storage rooms and vessels

The design, construction and maintenance of bulk storage and handling facilities are covered by codes of the practice published by the Health and Safety Executive and the Environment Agency.

##### 7.3.4 Materials to avoid

Avoid contact with all metals, oxidizing agents and Alkalis.

##### 7.3.5 Other data

Storage period 12 months

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### 8.1 CONTROL PARAMETERS Occupational Exposure Limits Ireland United Kingdom

Component	CAS No	Type	Value	Form
Iron-II-Chloride	7758-94-3	STEL TWA	2 mg.m <sup>-3</sup> 1 mg.m <sup>-3</sup>	Calculated as Fe



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### Derived No-Effect Level (DNEL)

Component	CAS No	Type	Route	Value	Form
Iron-II-Chloride	7758-94-3	Industry (worker)	Dermal	2.8 mg/kg bw/day	Long term systemic effects
		Consumer	Dermal	1.4 mg/kg bw/day	Long term systemic effects
		Consumer	Oral	0.28 mg/kg bw/day	Long term systemic effects
		Consumer	Oral	20 mg/kg bw/day	Acute effects, systemic effects

## 8.2 EXPOSURE CONTROLS

### 8.2.1 Occupational exposure controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Good general ventilation should be sufficient to control airborne levels. Local exhaust is suggested for use, where possible, in enclosed or confined spaces. Ventilation should effectively remove and prevent build-up of any aerosols or mists generated from the handling of the product

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

### 8.2.1 Instructional measures to prevent exposure

Where there is potential for exposure: provide specific activity training to operators to minimise exposure

### 8.2.3 Organisational measures to prevent exposure

Regularly inspect, test and maintain all control measures.

### 8.2.4 Technical measures to prevent exposure

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. Clear up spills immediately and dispose of wastes safely. Wash thoroughly after handling

## 8.3 PERSONAL PROTECTION EQUIPMENT



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Respiratory protection

Respiratory protection is not required under normal handling conditions. If aerosols or mist are formed, use half mask with dust filter P2

Hand protection

Compatible chemical resistant gloves, preferably gauntlet type (Nitrile Rubber) (EN374)  
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves.  
Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough.  
Break through time: > 480 min

Eye protection

Tightly fitting safety goggles or face-shield (EN166)  
Eye wash fountain is recommended

Body protection:

Wear chemical resistant overalls / suit and rubber boots

## 9. PHYSICAL & CHEMICAL PROPERTIES

Parameter	Units	Value	Comment
<b>Appearance/Physical State</b>		Liquid	Aqueous solution of low volatility
<b>Appearance/Colour</b>		Green / Brown	
<b>Odour</b>		Not significant	
<b>pH</b>		1.0	Acidic
<b>Crystallisation point</b>	°C	- 20	
<b>Boiling point</b>	°C	> 100	
<b>Density (at 15°C)</b>	g/cm <sup>3</sup>	1.200	
<b>Vapour pressure</b>	kPa	Not applicable	In accordance with column 2 of REACH Annex VII, the study does not need to be conducted
<b>Viscosity at 40°C</b>	mPa.s		
<b>Partition coefficient</b>		Not applicable	Inorganic compound
<b>Water solubility</b>		Completely soluble	Miscible





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<b>Flash point</b>	°C	Not applicable	In accordance with column 2 of REACH Annex VII, the study does not need to be conducted; inorganic compound.
<b>Auto flammability</b>	°C	Non flammable	Substance is non-flammable
<b>Flammability</b>	%	Non flammable	Substance is non-flammable
<b>Explosiveness</b>		Not applicable	
<b>Oxidising properties</b>		Not oxidising	
<b>Thermal Decomposition</b>	°C	315	

## 10. STABILITY & REACTIVITY

### 10.1 REACTIVITY

Corrosive to metals

### 10.2 CHEMICAL STABILITY

Stable under normal conditions

### 10.3 CONDITIONS TO AVOID

Do not expose to temperatures above 50°C. Do not freeze.

### 10.4 MATERIALS TO AVOID

Avoid contact with metals

Avoid contact with oxidising agents especially hypochlorites and chlorites

Reacts violently with strong alkaline substances. This product may react with reducing agents. Do not mix with other chemicals

### 10.5 HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide Carbon dioxide (CO<sub>2</sub>). Ammonia. Nitrogen oxides (NO<sub>x</sub>). Hydrogen chloride (HCl).

## 11. TOXICOLOGICAL INFORMATION

### 11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

#### ACUTE TOXICITY

ORAL

#### Iron-II-Chloride

LD<sub>50</sub> / Oral / Rat 500 mg.kg<sup>-1</sup>



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**DERMAL**LD<sub>50</sub> / Dermal / Rat > 2,000 mg.kg<sup>-1</sup>**INHALATION**

No data available, not applicable

**IRRITATION AND CORROSION****Iron-II-Chloride****EYE IRRITATION**

Eyes: Causes serious eye damage

**SKIN IRRITATION**

Skin: Irritant

**SKIN SENSITISATION**

No data available

**12. ECOLOGICAL INFORMATION****12.1 BASIS FOR ASSESSMENT**

The data is based on the toxicological properties of individual components of the product

**12.2 MOBILITY**

Water solubility: Completely soluble ( 20 °C)

**12.3 PERSISTENCE / DEGRADABILITY**

The methods for determining the biological degradability are not applicable to inorganic substances.

When diluted below a mass fraction of 1% hydrolysis and hydroxide formation occurs.

**12.4 BIOACCUMULATION**

The product is not expected to bioaccumulate.

**12.5 ECOTOXICITY****Iron-II-Chloride:**

EC50/72 h *Pseudokirchneriella subcapitata*: 6.9 mg.l<sup>-1</sup>

EC50/48 h *Daphnia magna*: 19 mg.l<sup>-1</sup>

The compound is considered to have no long term effects in aquatic systems due to the rapid formation of insoluble hydroxides.

**12.6 OTHER ADVERSE EFFECTS**

No data available

**13. DISPOSAL CONSIDERATIONS**



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### 13.1 APPROPRIATE DISPOSAL

Classified as hazardous waste.

Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations. Must be disposed of in accordance with local and national regulations. Thoroughly cleaned packaging material may be recycled.

### 13.2 CONTAMINATED PACKAGING

Packages that cannot be cleaned must be disposed of the same way as the unused product. Must be disposed of in accordance with local and national regulations.

## 14. TRANSPORT INFORMATION

UN No 1760

### 14.1 LAND TRANSPORT (ADR/RID)

UN Proper Shipping Name (PSN) Corrosive liquid, NOS (Iron (II) Chloride)  
 Class 8  
 Packing Group III  
 Risk Code 80  
 Labels 8

### 14.2 SEA TRANSPORT (IMDG-Code)

UN Proper Shipping Name (PSN) Corrosive liquid, NOS (Iron (II) Chloride)  
 Class 8  
 Packing Group III  
 Labels 8  
 Environmentally Hazardous Not a Marine Pollutant

### 14.3 AIR TRANSPORT (ICAO-IATA/DGR)

UN Proper Shipping Name (PSN) Corrosive liquid, NOS (Iron (II) Chloride)  
 Class 8  
 Packing Group III  
 Labels 8

## 15. REGULATORY INFORMATION

### 15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

Other regulations No restrictions identified other than those already covered in regulations

### 15.2 EU REGULATIONS CHEMICAL SAFETY ASSESSMENT

For the following substances of this mixture a chemical safety assessment has been carried out: Iron-II-chloride



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## 16. OTHER INFORMATION

### 16.1 RELEVANT R- AND H- PHRASES IN SECTION 3 (NUMBER AND FULL TEXT):

R22	Harmful if swallowed
R36/38	Irritating to eyes and skin
R38	Irritating to skin
R41	Risk of serious damage to eyes
R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed
R51	Toxic to aquatic organisms
R53	May cause long-term adverse effects in the aquatic environment
H302	Harmful if swallowed
H315	Causes skin irritation
H318	Causes serious eye damage
H319	Causes serious eye irritation
H373	May cause damage to organs through prolonged or repeated exposure
H411	Toxic to aquatic life with long lasting effects
H290	May be corrosive to metals