



# **End of Waste Code**

## **Ferrous Chloride (ENEW07530718)**

*Waste Reduction and Recycling Act 2011*



## Version history

Version	Date	Description of changes
1.00	16 October 2020	Commencement of EOW code
1.01	19 November 2021	Amendment of EOW code- Approval by gazette
1.02	23 June 2023	Minor update to reflect the definition of waste moving into the <i>Waste Reduction and Recycling Act 2011</i> . This does not impact the interests of the producer or user of the resource.

Prepared by: Waste Assessment, Department of Environment and Science

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June 2023

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## 1. Explanatory Statement

This End of Waste (EOW) code for **ferrous chloride** has been issued by the **chief executive** in accordance with section 159 of the *Waste Reduction and Recycling Act 2011* (WRR Act).

This EOW code states when the **ferrous chloride** becomes a **resource** and any relevant requirements and/or conditions for its use. If the **resource** is not being used in accordance with the relevant requirements and/or conditions of this EOW code, or another type of permit that allows for its use, it is considered a waste under section 8AA of the WRR Act and must be disposed of appropriately at a facility that is **lawfully** able to receive the waste.

## 2. Guidance

### 2.1 Resource use versus activity

Under section 155 of the WRR Act, a waste stops being a waste and becomes a **resource** when it meets the requirements and conditions of an EOW code. Under section 159 of the WRR Act, an EOW code specifies the circumstances when a waste becomes a resource; how it must be used to be considered a resource; when it is no longer considered a resource but a waste instead; and conditions that must be complied with by resources users and registered resource producers.

An Environmental Authority (EA) under the *Environmental Protection Act 1994* (EP Act) is required where an activity being undertaken triggers the threshold for any environmentally relevant activity (ERA). This means that treating or processing the waste to meet the resource quality criteria under the EOW code may require an EA under the EP Act if the activity meets the threshold for an ERA.

### 2.2 Resource versus waste

A waste that is a **resource** under an EOW code is considered a **resource** only for the use(s) approved in an EOW code. To be considered a resource under the EOW code, the material used as the resource must meet the requirements of the EOW code and be used in accordance with the conditions of the EOW code, otherwise it is considered a waste and must be managed in accordance with waste management requirements under the EP Act and the WRR Act and their subordinate legislation.

A **resource** under an EOW code, is deemed to be a waste again, if it is not used in accordance with the EOW code; if it is disposed of at a waste disposal site; or if it is deposited at a place in a way that would, apart from its use approved under an EOW code, constitute a contravention of the general littering provision (section 103) or the illegal dumping of waste provision (section 104) under the WRR Act.

### 2.3 Failure to comply

It is an offence under section 158(1) of the WRR Act for a **registered resource producer** to produce the **resource**, or use, sell or give away the **resource** unless they comply with the requirements under an EOW code. Further, it is an offence under section 158(2) of the WRR Act for a **person** to use the **resource** in a way, or for a purpose, that does not comply with an EOW code for the **resource**. These offences carry a maximum penalty of 1,665 penalty units for an individual and 8,325 penalty units for a corporation<sup>1</sup>.

Please refer to Appendix A of this EOW code for general obligations for all **persons** operating under this EOW code, which includes the **resource users**.

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<sup>1</sup> The value of a penalty unit is stated in the *Penalties and Sentences Regulation 2015* (Qld).

## 2.4 Lawfulness of the activity

The issuing of this EOW code for the use of a **resource** does not warrant or imply the lawfulness of the activity under all legislation, or that approvals necessary under other legislation have or will be approved. It is the responsibility of the **registered resource producer** and **resource user** to identify and obtain all other approvals necessary for the relevant activities.

## 3. Period of this EOW code

This EOW code takes effect from the date of gazettal and remains in force until it is cancelled, amended or suspended by the **chief executive**<sup>2</sup>.

## 4. Waste to which this EOW code applies

This EOW code is limited to **ferrous chloride** which has been **lawfully** generated as a by-product of **steel pickling**. The **ferrous chloride** becomes a **resource** when the requirements and conditions under this EOW code are met.

## 5. Person to whom this EOW code applies

### 5.1 Registered resource producers of the resource

- 5.1.1 A **registered resource producer** for this EOW code must comply with the stated registered resource producer requirements in Section 6 – Registered Resource Producer Requirements.

### 5.2 Resource users

- 5.2.1 The **resource user** must only use the **resource** in a way, and for a purpose allowed under this EOW code.
- 5.2.2 The **resource user** must comply with the stated conditions of use in Section 7 – Conditions of Use.

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<sup>2</sup> If an EOW code is to be amended, cancelled or suspended, the chief executive will provide an opportunity to make written submissions by providing a proposed action notice to the registered resource producers; and publishing the proposed action notice on the chief executive's [website](#).

## 6. Registered Resource Producer Requirements

Registration under this EOW code	
(6.1)	Prior to operating under this EOW code, the producer of the <b>resource</b> must register with the <b>chief executive</b> by giving a notice in the approved form <sup>3</sup> to become a <b>registered resource producer</b> for this EOW code.
Approved resource	
(6.2)	The approved <b>resource</b> is <b>ferrous chloride</b> that complies with <i>Requirement (6.3)</i> of this EOW code.
(6.3)	The <b>registered resource producer</b> must not use, sell or give away the <b>resource</b> under this EOW code unless the resource complies with the following criteria and quality characteristics: <ul style="list-style-type: none"> <li>a) is generated during <b>steel pickling</b>; and</li> <li>b) does not exceed the quality criteria stated in <i>Table 1: Resource quality criteria</i>.</li> </ul>
(6.4)	<b>Table 1: Resource Quality Criteria</b>
Quality criteria	Total maximum concentration (mg/kg unless otherwise specified)
Concentration as FeCl <sub>2</sub>	25 – 34% w/w
Iron	11 – 15% w/w
Free Acidity (HCl)	<1% w/w
Specific Gravity at 20°C	1.29-1.45
Aluminium	100
Antimony	2
Arsenic	5
Barium	10
Cadmium	1
Chromium	70
Cobalt	7 <sup>4</sup>
Copper	100
Lead	20
Manganese	700
Molybdenum	10
Mercury	0.5

<sup>3</sup> The approved form, *Registered Resource Producer for an EOW code*, is available on the Queensland Government website at [www.qld.gov.au](http://www.qld.gov.au), using the publication number (ESR/2018/4082) as a search term.

<sup>4</sup> If the treated wastewater from the wastewater treatment plant is used as agricultural irrigation water or is discharged to freshwater riverine systems, a total maximum concentration of 25mg.Metal/kg can be used.

Nickel	50
Selenium	5
Tin (inorganic)	5
Zinc	100
<b>Resource monitoring</b>	
(6.5)	The <b>registered resource producer</b> must sample, measure and record the composition of the <b>resource</b> for the quality characteristics in <i>Table 1: Resource quality criteria</i> , on an annual basis as a minimum.
(6.6)	All analysis required under this EOW code must be carried out by a laboratory that has <b>NATA</b> certification, or an equivalent certification, for such analyses.
<b>Information to be provided</b>	
(6.7)	<p>The <b>registered resource producer</b> must provide the following to the <b>resource user</b> upon establishment of an arrangement to sell or give away the <b>resource</b>, and annually thereafter:</p> <ul style="list-style-type: none"> <li>a) a copy of the EOW code for <i>Ferrous Chloride (ENEW07530718)</i><sup>5</sup>;</li> <li>b) the <b>registered resource producer</b>'s business name, <b>ABN</b> and address;</li> <li>c) confirmation in writing that the <b>resource</b> being supplied is compliant with <i>Requirement (6.3)</i> of this EOW code;</li> <li>d) a most recent certificate of analysis for the quality characteristics listed in <i>Table 1: Resource quality criteria</i>; and</li> <li>e) a <b>safety data sheet</b> for the <b>resource</b>.</li> </ul>
<b>Records</b>	
(6.8)	<p>The <b>registered resource producer</b> must keep the following <b>records</b> of the <b>resource</b> supplied to a <b>resource user</b>:</p> <ul style="list-style-type: none"> <li>a) origin of the <b>resource</b> (e.g. address, lot on plan and/or GPS coordinates);</li> <li>b) quantity (in tonnes) of the <b>resource</b> supplied;</li> <li>c) quality criteria of the <b>resource</b> (including but not limited to the quality characteristics listed in <i>Table 1: Resource quality criteria</i>);</li> <li>d) date of dispatch of the <b>resource</b>; and</li> <li>e) business's name, <b>ABN</b> and address of the <b>person</b> receiving the <b>resource</b>.</li> </ul>
(6.9)	<p>All <b>records</b> required to be kept by the <b>registered resource producer</b> under this EOW code must be:</p> <ul style="list-style-type: none"> <li>a) kept by the <b>registered resource producer</b> for a period of not less than five (5) years; and</li> <li>b) provided to the <b>chief executive</b> upon request, in the format requested and in the time period specified.</li> </ul>

<sup>5</sup> This can be a physical copy, an electronic copy or a link to the chief executive's [website](#) where this EOW code is available.

Notification of <b>emergencies</b> , incidents and breaches	
(6.10)	Any breach of a requirement of this EOW code must be reported to the <b>chief executive</b> within 24 hours of becoming aware of the breach.
(6.11)	<b>Records</b> of any breach of a requirement of this EOW code, including full details of the breach and any subsequent actions taken, must be kept and provided to the <b>chief executive</b> upon request and in the format and time period specified.

## 7. Conditions of Use

Approved uses	
(7.1)	The approved <b>resource</b> is <b>ferrous chloride</b> that complies with <i>Requirement (6.3)</i> of this EOW code and is used for the following uses: <ul style="list-style-type: none"> <li>a) as hydrogen sulphide control in <b>water treatment services</b>;</li> <li>b) as phosphorous control in <b>water treatment services</b>;</li> <li>c) as corrosion control in heat exchangers in <b>energy related services</b>; and/or</li> <li>d) as cyanide control in mine tailings at a <b>mining activity</b>.</li> </ul>
Approved use as hydrogen sulphide control in water treatment services	
(7.2)	The approved use as hydrogen sulphide control is only permitted to be carried out at <b>water treatment services</b> authorised under an <b>environmental authority</b> .
Approved use as phosphate control in water treatment services	
(7.3)	The approved use as phosphate control is only permitted to be carried out at <b>water treatment services</b> authorised under an <b>environmental authority</b> .
Approved use as corrosion control in heat exchangers in energy related services	
(7.4)	The approved use as corrosion control in heat exchangers in only permitted to be carried out at <b>energy related services</b> authorised under an <b>environmental authority</b> .
Approved use as cyanide control at a mining activity	
(7.5)	The approved use as cyanide control in mine tailings in only permitted to be carried out at a <b>mining activity</b> authorised under an <b>environmental authority</b> .
Storage of the resource	
(7.6)	The <b>resource</b> must be stored in a way that prevents contact with stormwater or runoff.
Records	
(7.7)	The <b>resource user</b> must <b>record</b> the following information of the <b>resource</b> received by the <b>resource user</b> under this EOW code: <ul style="list-style-type: none"> <li>a) business's name, <b>ABN</b> and address of the <b>registered resource producer</b> who supplied the <b>resource</b>;</li> </ul>



	<ul style="list-style-type: none"> <li>b) date the <b>resource user</b> received the <b>resource</b>;</li> <li>c) quantity (in tonnes) of the <b>resource</b> received by the <b>resource user</b>; and</li> <li>d) <b>site of use of resource</b> (e.g. street address, lot on plan and/or GPS coordinates).</li> </ul>
(7.8)	<p>All <b>records</b> required to be kept by the <b>resource user</b> under this EOW code must be:</p> <ul style="list-style-type: none"> <li>a) kept by the <b>resource user</b> for a period of not less than five (5) years; and</li> <li>b) provided to the <b>chief executive</b> upon request, in the format requested and in the time period specified.</li> </ul>
Notification of <b>emergencies</b> , incidents and breaches	
(7.9)	Any breach of a condition of this EOW code must be reported to the <b>chief executive</b> within 24 hours of becoming aware of the breach.
(7.10)	<b>Records</b> of any breach of a condition of this EOW code, including full details of the breach and any subsequent actions taken, must be kept and provided to the <b>chief executive</b> upon request and in the format requested and time period specified.

## 8. Definitions

Words and phrases used throughout this EOW code in **bold** are defined below. Where a definition for a term used in this EOW code is sought and the term is not defined within this EOW code the definitions provided in the relevant legislation shall be used.

**‘ABN’** means Australian Business Number which is a unique 11-digit number issued by the Australian Business Register and identifies a business in Australia.

**‘chief executive’** means the Department of Environment and Science or its successor.

**‘electricity generation’** means environmentally relevant activity (ERA) 14 for electricity generation authorised under an **environmental authority**.

**‘emergency(ies)’** means a situation where either human health or safety is threatened, or serious or material environmental harm has been or is likely to be caused; or urgent action is necessary to protect the health or safety of persons, or prevent or minimise the harm, or rehabilitate or restore the environment because of the harm.

**‘energy related services’** means the environmentally relevant activities for **electricity generation** and **fuel burning**.

**‘environmental authority’** is an approval granted by the **chief executive** pursuant to the *Environmental Protection Act 1994* which authorises the holder of the environmental authority to carry out an environmentally relevant activity or a mining activity.

**‘environmental harm’** means environmental harm as defined in Chapter 1 of the *Environmental Protection Act 1994*.

**‘ferrous chloride’** is a liquid by-product which has been **lawfully** generated during **steel pickling**.

**‘fuel burning’** means environmentally relevant activity (ERA) 15 for fuel burning authorised under an **environmental authority**.

**‘lawfully’** means allowed or permitted by law and not contrary to law.

**‘load’** means the volume of resource put in or on something for conveyance or transportation, carried at one time and to one **site of use**. For example, a truck and trailer carrying the resource is considered as one load as well as multiple bins travelling by rail. Where the resource is transported via conveyor systems, information should be recorded on a daily basis until the transfer ceases.

**‘mining activity’** (as defined in Chapter 5 of the *Environmental Protection Act 1994*) means –

- a) an activity that is an authorised activity for a mining tenement under the *Mineral Resources Act 1989*; or
- b) another activity that is authorised under an approval under the *Mineral Resources Act* that grants rights over land.

**‘NATA’** is the National Association of Testing Authorities.

**‘person’** means an individual or a corporation.

**‘records’** include breach notifications, written agreements, analysis results, monitoring reports and monitoring programs required under a requirement or a condition of this EOW code.

**‘registered resource producer(s)’** means a **person** who produces the **resource** and has registered with the **chief executive** (in accordance with *Requirement (6.1)*) to use, sell or give away the **resource** to be used under this EOW code.

**‘resource(s)’** means **ferrous chloride**.

**‘resource user(s)’** means a **person** who has notified the **chief executive** (in accordance with *Condition (7.1)*) to receive the **resource** from a **registered resource producer** and uses the **resource** for a use approved under this EOW code and does so in such a manner which does not cause any **environmental harm**.

**‘safety data sheet’** means a document containing data regarding the properties of the **resource** which provides information on handling or working with that substance in a safe manner; and includes information such as physical data toxicity, environmental characteristics, health effects, first aid, reactivity; and storage, disposal, protective equipment and spill handling procedures. The safety data sheet must be compliant with Safe Work Australia’s *Model Code of Practice: Preparation of safety data sheets for hazardous chemicals*.

**‘sewage treatment’** means environmentally relevant activity (ERA) 63 for sewage treatment authorised under an **environmental authority**.

**‘site of use’** means the relevant location(s) where the **resource user** uses the **resource** in accordance with this EOW code.

**‘steel pickling’** means the treatment of manufactured steel with hydrochloric acid to remove surface mill scale and rust prior to the steel undergoing further processing such as rolling, coating, or galvanising.

**‘water treatment’** means environmentally relevant activity (ERA) 64 for water treatment authorised under an **environmental authority**.

**‘water treatment services’** means the prescribed environmentally relevant activities for **sewage treatment** and **water treatment**.

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## Appendix A —General obligation for all persons

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This appendix is not intended to provide a comprehensive assessment of all obligations under Queensland law. It provides some general information and persons are encouraged to familiarise themselves with all requirements related to their specific operation.

### Responsibilities under the *Environmental Protection Act 1994*

All persons within the State of Queensland must also meet their obligations under the *Environmental Protection Act 1994*, and the regulations made under that Act.

#### General environmental duty

Section 319 of the *Environmental Protection Act 1994* states that we all have a general environmental duty. This means that we are all responsible for the actions we take that affect the environment. We must not carry out any activity that causes or is likely to cause environmental harm unless we take all reasonable and practicable measures to prevent or minimise the harm. To decide what meets your general environmental duty, you need to consider:

- the nature of the harm or potential harm
- the sensitivity of the receiving environment
- the current state of technical knowledge for the activity
- the likelihood of successful application of the different measures to prevent or minimise environmental harm that might be taken
- the financial implications of the different measures as they would relate to the type of activity.

It is not an offence not to comply with the general environmental duty. However, maintaining your general environmental duty is a defence against the following acts:

- (a) an act that causes serious or material environmental harm or an environmental nuisance
- (b) an act that contravenes a noise standard
- (c) a deposit of a contaminant, or release of stormwater run-off, mentioned in section 440ZG.

More information is available on the Department of Environment and Science website [www.des.qld.gov.au](http://www.des.qld.gov.au).

### Some relevant offences under the *Environmental Protection Act 1994*

#### Causing serious or material environmental harm (sections 437–39)

Material environmental harm is when the harm is not trivial or negligible in nature. Serious environmental harm is harm that is irreversible, of a high impact or widespread, or that is caused to an area of high conservation value or special significance. Damages, or costs required to rehabilitate the environment, of over \$5000 constitutes material environmental harm and damages, or costs required to rehabilitate the environment, of over \$50,000 constitutes serious environmental harm.

Serious or material environmental harm excludes environmental nuisance.

#### Causing environmental nuisance (section 440)

Environmental nuisance is unreasonable interference with an environmental value caused by aerosols, fumes, light, noise, odour, particles or smoke. It may also include an unhealthy, offensive or unsightly condition because of contamination.

#### Depositing a prescribed water contaminant in waters (section 440ZG)

Prescribed contaminants include a wide variety of contaminants listed in Schedule 10 of the Environmental Protection Regulation 2019.

It is your responsibility to ensure that prescribed contaminants are not left in a place where they may or do enter a waterway, the ocean or a stormwater drain. This includes making sure that stormwater falling on or running across your site does not leave the site contaminated. Where stormwater contamination occurs you must ensure that it is treated to remove contaminants. You should also consider where and how you store material used in your processes onsite to reduce the chance of water contamination.

**Placing a contaminant where environmental harm or nuisance may be caused (section 443)**

A person must not cause or allow a contaminant to be placed in a position where it could reasonably be expected to cause serious or material environmental harm or environmental nuisance.

**Some relevant offences under the *Waste Reduction and Recycling Act 2011***

**Littering (section 103)**

Litter is any domestic or commercial waste and any material a person might reasonably believe is refuse, debris or rubbish. Litter can be almost any material that is disposed of incorrectly. Litter includes cigarette butts and drink bottles dropped on the ground, fast food wrappers thrown out of the car window, poorly secured material from a trailer or grass clippings swept into the gutter. However, litter does not include any gas, dust, smoke or material emitted or produced during, or because of, the normal operations of a building, manufacturing, mining or primary industry.

**Illegal dumping of waste (section 104)**

Illegal dumping is the dumping of large volumes of litter (200 litres or more) at a place. Illegal dumping can also include abandoned vehicles.

**Failure to comply with EOW code (section 158)**

A registered resource producer for an EOW code must not use, sell or give away the resource unless the registered resource producer complies with the requirements of the EOW code relating to the resource.

A person, other than a registered resource producer, must not use a resource in a way, or for a purpose, that does not comply with an EOW code for the resource.

**Approved:**

26 October 2021

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