

END-OF-WASTE CRITERIA FOR RECOVERED AMMONIUM SULPHATE

SINGLE CASE DECISION FOR ENVA IRELAND LIMITED (T/A ENVA)

This document sets out end-of-waste criteria for
recovered ammonium sulphate,
produced by Enva.

ENVIRONMENTAL PROTECTION AGENCY

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Final Decision establishing End-of-Waste Criteria
under
Article 28 of the European Communities (Waste Directive) Regulations 2011
for
recovered ammonium sulphate
produced by
Enva Ireland Limited (T/a Enva),
Clonminam Industrial Estate,
Portlaoise,
County Laois.
Decision Date: 3rd July 2020

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1 Introduction

Article 6 of the Waste Framework Directive, 2008¹ was transposed into Irish law by the European Communities (Waste Directive) Regulations 2011². The Article 28(3) of the Regulation assigns responsibility to the Environmental Protection Agency to make certain decisions regarding end-of-waste.

1.1 What are end-of-waste criteria?

End-of-waste is a means of determining the point at which, for the purposes of waste regulation, a material need no longer be classified as waste after it has undergone a recovery, including recycling, operation and complies with specific criteria to be developed in accordance with the specific conditions as outlined in the Regulation.

1.2 Complying with the end-of-waste criteria

Compliance with the criteria as outlined in this document is sufficient to ensure that recovered ammonium sulphate may be used as a secondary material without the need for waste regulation or control.

1.3 When end-of-waste compliant material may become waste

Enva Ireland Limited as the producer of the recovered ammonium sulphate should note that, even if the end-of-waste criteria has been complied with, the material will become waste again, and subject to waste management controls if:

- 1.3.1 it is discarded or there is an intention or requirement to discard, for example if it is disposed of;
- 1.3.2 it is stored indefinitely with little possibility of being used;
- 1.3.3 it is mixed with other waste materials; or
- 1.3.4 the producer cannot provide documented evidence of compliance with these end-of-waste criteria.

1.4 Updating the criteria

These end-of-waste criteria may be reviewed and updated by the EPA at any stage based on the experience of practical applications, technological developments or legislative amendments. The EPA reserves the right to depart from the position outlined and to take appropriate action to avoid overall adverse environmental or human health impacts. If at any time the European Commission publishes generally applicable end-of-waste criteria for recovered ammonium sulphate, those European criteria may supersede these criteria and the EPA may withdraw this decision.

1.5 Exporting end-of-waste compliant material

These end-of-waste criteria are applicable in Ireland only.

¹ Waste Framework Directive - Directive 2008/98/EC on waste (WFD)

² Waste Directive Regulations - European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011)

1.6 Application

The recovered ammonium sulphate may be used as a fertiliser product or as a component of fertiliser products only. The ammonium sulphate will be sold to fertiliser producers/manufacturers who may package and sell the ammonium sulphate as a straight fertiliser or blend it with other nutrient components to form other fertiliser products.

1.7 Interpretation

This decision document is for the purposes of article 28 of the European Communities (Waste Directive) Regulations 2011 only and nothing in this document shall be construed as negating Enva Ireland Limited or users' statutory obligations or requirements under any other authorisations, enactments or regulations.

2 Decision and Reasons for the Decision

The EPA has decided, in accordance with article 28(3) of the European Communities (Waste Directive) Regulations 2011, that the recovered ammonium sulphate (as defined in the Glossary, Appendix 1) the subject of the application made by Enva Ireland Limited on the 1st March 2018, and produced at an appropriately authorised waste facility operated by Enva Ireland Limited, will cease to be waste if it complies with the end-of-waste criteria set out in this document.

The EPA is satisfied, based on:

- the information provided by the applicant, including additional information;
- the environmental and human health risk assessment undertaken by the applicant;
- Statutory Instrument No. 248/1978 - Marketing of Non-EEC Fertilisers Regulations, 1978; and,
- Joint Research Centre, 2009 Final Report on "End-of-waste criteria"

that, subject to compliance with the requirements of this decision, recovered ammonium sulphate conforms with the requirements of article 28(1)(a) & (b) of the Regulation and its use as a fertiliser, or as a component of a fertiliser, will not lead to overall adverse environmental and human health impacts, if used in accordance with the requirements of the Department of Agriculture, Food and the Marine.

3 Materials Handling & Control

3.1 Waste Inputs

3.1.1 Inputs shall be restricted to waste ammonium sulphate solution as per the List of Waste:

- 11 01 11* - aqueous rinsing liquids containing hazardous substances (ammonium sulphate solution).

- 3.1.2 Inputs shall be tested and comply with pollutant limits set out in Appendix 2.
- 3.1.3 Where non-conforming waste is delivered, it shall be immediately moved to a designated quarantine area and stored pending consignment to an appropriately authorised waste management facility.

3.2 Recovery Process

- 3.2.1 The recovery processes which includes use of desalination plant which is required in order to obtain the ammonium sulphate shall be completed in accordance with waste regulatory requirements, including requirements relating to compliance with the industrial emissions licence.

3.3 Quality of Recovered Ammonium Sulphate

- 3.3.1 The recovered ammonium sulphate shall comply with the relevant product standard(s), legislative requirements and customer specifications.
- 3.3.2 Each batch of the recovered ammonium sulphate shall be assigned a unique identifier. The recovered ammonium sulphate shall be tested, in a laboratory accredited to EN ISO/IEC 17025, using an accredited test method, where available, and in accordance with test method requirements specified within fertiliser regulations, and comply with the criteria set out in Appendix 3.
- 3.3.3 The recovered ammonium sulphate shall:
 - i. comply with relevant provisions of the CLP³ regulation;
 - ii. comply with relevant provisions of the REACH⁴ regulation; and
 - iii. comply with relevant provisions of the fertiliser regulation⁵.

As regulations are subject to amendment and replacement, it is the producer and user's responsibility to ensure that current regulations are referred to.

4 Demonstrating compliance with the decision establishing end-of-waste criteria

Enva Ireland Limited shall be able to demonstrate compliance with the requirements of this decision. If unable to do so the recovered ammonium sulphate will be considered a waste.

4.1 Records Management

In order to be able to demonstrate compliance with these end-of-waste criteria, the following records of production, testing and sale or supply of the recovered ammonium sulphate shall be maintained;

³ Classification, Labelling and Packaging - Regulation (EC) No 1272/2008 (CLP)

⁴ Registration, Evaluation, Authorisation and Restriction of Chemicals - Regulation 1907/2006/EC (REACH)

⁵ Statutory Instrument No. 248/1978 - Marketing of Non-EEC Fertilisers Regulations, 1978

- 4.1.1 Training records shall be maintained which demonstrate that all relevant persons have been appropriately trained in all aspects of these criteria, including the relevant product standard(s), legislative requirements and customer specifications.
- 4.1.2 Environmental & Quality Management: The following procedures and records of quality assurance shall be maintained.
- i. a procedure for on-site waste ammonium sulphate solution acceptance, storage and processing;
 - ii. a procedure for complying with customer specifications as required;
 - iii. details of the quality assurance system which is in place to comply with the relevant product standard(s), legislative requirements and customer specifications;
 - iv. a procedure for sampling and analysis of the input waste ammonium sulphate solution to establish the content and nature of any contaminant components. The procedure shall include:
 - a) the types of testing for the input waste;
 - b) the process for determining sampling frequencies, and
 - c) sampling and testing frequency.
 - v. a procedure for sampling and analysis of the output material (recovered ammonium sulphate) to establish the content and nature of any contaminant components. The procedure shall include:
 - d) the types of testing for the product;
 - e) the process for determining sampling frequencies, and
 - f) sampling and testing frequency.
 - vi. procedure(s) for the use, control, calibration and maintenance of inspection, measuring and test equipment shall be set up and followed. Equipment shall be uniquely identified.
 - vii. a procedure for the identification and management of non-conforming recovered ammonium sulphate.
- 4.1.3 In order to demonstrate that the recovered ammonium sulphate does not pose a risk to the environment or human health, the producer shall make available;
- i. the results of any analysis carried out;
 - ii. interpretative reports including lab results;
 - iii. details of the test methods used;
 - iv. details of accreditation of the test method;
 - v. details of accreditation of laboratory;

- vi. independent audit reports demonstrating the outcome of any independent audit of the recovered ammonium sulphate processing shall be made available for inspection; and
 - vii. if contaminants above the allowable limits are identified, details of the actions taken to correctly dispose of the non-conforming load(s) and corrective action(s) taken prior to dispatch and to prevent any such recurrence.
- 4.1.4 A register of non-conforming products i.e. a product that does not meet the requirements of the fertiliser regulations, as appropriate, or these criteria shall be maintained. The register shall contain information as to the reasons for the non-conformance and the manner in which the non-conformance was rectified. The register should also include information on the outlet for the non-conforming product, i.e. re-introduced to the start of the process, disposed of, or recovered as waste.
- 4.1.5 A 'declaration of conformity' shall be completed for each consignment of recovered ammonium sulphate leaving the facility. The declaration of conformity shall;
- i. include a product description and the unique identifier for each batch included in the consignment;
 - ii. include a signed and dated declaration which declares that the material has achieved end-of-waste status in accordance with the EPA decision (decision title and date of decision);
 - iii. state that the relevant provisions of CLP regulations, REACH regulations and fertiliser regulations have been complied with;
 - iv. state the relevant provisions of the appropriate product standard(s) and customer specifications to which the recovered ammonium sulphate has been complied with. Details of the name of the specific standard(s) and specification(s) which are being applied are to be included;
 - v. state any restrictions on use;
 - vi. state the date of supply;
 - vii. state the customer's name and contact details;
 - viii. state the quantity supplied by weight / volume;
 - ix. be issued in electronic form;
 - x. be issued prior to the recovered ammonium sulphate leaving the facility; and
 - xi. be accompanied by or contain a link to an electronic copy of the safety data sheet for the recovered ammonium sulphate.

- 4.1.6 CLP, REACH and fertiliser regulations: The producer shall maintain documentary evidence, for assessment by the relevant competent authority which demonstrates compliance, where appropriate, with the provisions of the, CLP, REACH and fertiliser regulations. The producer shall ensure these matters are addressed in customer supply contracts.
- 4.1.7 Retention of Records: All records including controls, inspections and training shall be maintained for a minimum of 5 years.
- 4.1.8 Storage of Records: Records including any electronic media shall be stored and maintained in a manner that they are readily retrievable and protected against damage, deterioration or loss. Records shall be legible, identifiable and traceable to the process or product. All reviews and revisions of procedures are to be included in an annex to the most up to date version of that procedure.
- 4.1.9 The producer shall, upon request, provide competent authorities including EPA, the relevant local authorities, Department of Agriculture, Food and Marine (DAFM) and the Health and Safety Authority (HSA) access to the quality management system.

5 Use and Restrictions on Use

Users of recovered ammonium sulphate that are produced in compliance with these criteria shall take full account of any environmental impact resulting from such use.

To comply with these criteria, the following restrictions apply:

- The recovered ammonium sulphate is to be used as a fertiliser or component of a fertiliser only and
- The recovered ammonium sulphate is limited to sale and use in the Republic of Ireland only.

These criteria do not affect the obligation of producers to hold and comply with a waste collection permit, certificate of registration, waste facility permit or waste/industrial emissions licence or any other National or European legislation which may apply when transporting, storing or processing waste. These criteria do not affect permitting or any other legal requirements that do not depend on the status of the material as a waste.

Appendix 1: Glossary of Terms

Applicant	Enva Ireland Limited (T/a Enva), Clonminam Industrial Estate, Portlaoise, County Laois.
Authorised waste facility	A facility which has been granted a waste authorisation in the form of an Industrial Emissions licence, a waste licence, a waste facility permit or a certificate of registration.
CLP	Classification, Labelling and Packaging: Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008
Consignment	Each load of recovered ammonium sulphate that leaves the facility.
Declaration of Conformity	A declaration that the recovered ammonium sulphate conforms to end-of-waste criteria, product standards and specifications, it includes details of restriction on use of the recovered ammonium sulphate.
Recovered Material	Ammonium sulphate that meets these end-of-waste criteria.
Producer	Enva Ireland Limited (T/a Enva), Clonminam Industrial Estate, Portlaoise, County Laois.
Fertiliser Regulations	Statutory Instrument No. 248/1978 - Marketing of Non-EEC Fertilisers Regulations, 1978; or any amendment or replacement thereof.
EU Regulation 2019/1009	Regulation (EU) 2019/1009 of the European Parliament and of the Council of 5 June 2019 laying down rules on the making available on the market of EU fertilising products and amending Regulations (EC) No 1069/2009 and (EC) No 1107/2009 and repealing Regulation (EC) No 2003/2003
REACH	Regulation 1907/2006/EC concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals.
Recovery	As defined in the Waste Management Act 1996 as amended.
Recycling	As defined in the Waste Management Act 1996 as amended.
User	User means fertiliser manufacturing/ producers/ supply companies, contractors and all those organisations or individuals responsible for the end use of the recovered ammonium sulphate.
Waste	As defined in the Waste Management Act 1996 as amended.

Appendix 2: Sampling and Analysis (Input Waste)

The producer must comply with criteria set out in this document, including specifications and pollutant limits (waste acceptance criteria) specified below for the input waste (ammonium sulphate solution):

Parameter	Proposed max Acceptance Limit	Average acceptance concentration limit	Unit
Nitrogen	20	8.5	% w/w
Sulphate	50	34.5	% w/w
Cadmium	1	0.34	mg/l
Chrome (Total)	1	0.34	mg/l
Mercury	0.5	< 0.1	mg/l
Nickel	5	1.67	mg/l
Lead	2	0.67	mg/l
Arsenic	2	<0.5	mg/l
Copper	30	5	mg/l
Zinc	10	3	mg/l
Sodium	3	1	mg/l
Iron	120	40	mg/l
Silicon	120	40	mg/l
Antimony	3	1	mg/l

Appendix 3: Sampling and Analysis (Output Material)

The producer must comply with criteria set out in this document, including specifications and pollutant limits specified below, for the output material (recovered ammonium sulphate) at the time it is produced:

Parameter	Specification ^{Note 1}
Total Nitrogen content %	20% - 22%
Total Sulphur content %	23% - 25%
Assay % (excluding water)	99% - 100%
IR spectrum	No difference in a visual comparison of peaks with QC standard (Sigma)
Other	No other impurities that would alter the hazards associated with ammonium sulphate

Note1: Should any of the specifications as registered under REACH be amended or replaced, the most recent version of the specification shall be complied with. It is the responsibility of the producer and users to ensure that the most up to date version is being considered.

Parameter	Pollutant limit ^{Note 1}	Unit
Arsenic	40	mg/kg
Antimony	3	mg/kg
Biuret	12,000	mg/kg
Cadmium	3	mg/kg
Hexavalent Chromium (CR VI)	2	mg/kg
Copper	600	mg/kg
Iron	1,500	mg/kg
Lead	120	mg/kg
Mercury	1	mg/kg
Nickel	100	mg/kg
Perchlorate	50	mg/kg
Silicon	120	mg/kg
Sodium	29.68	mg/kg
Zinc	1,500	mg/kg

Note1: Should any of the pollutant limits under EU Regulation 2019/1009 be amended, including the addition of any pollutants, the most recent version of the pollutant limits shall be complied with. It is the responsibility of the producer and users to ensure that the most up to date version is being considered.