

Environmental Product Declaration



In accordance with ISO 14025:2006 for:

Family of Fire Extinguishers kg 6 Powder - 34A 233BC - UNI EN 3-7 - 100% Regenerated Powder

Average EPD of multiple products: 21063 – 500, 21063 – 510, 21063 – 540, 21063 – 550

From

EMME Antincendio S.r.l.



Program:

The International EPD® System, www.environdec.com

Programme operator:

EPD Internazionale AB

EPD Registration Number:

EPD-IES-0019486

Publication date:

2025-01-28

Valid until:

2030-01-20

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com



About the program

EPD Program:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
Email:	info@environdec.com

Liability for PCR, LCA, and independent third-party verification

Product Category Rules (PCR)

Product category rules (PCR): PCR 2010:08 Other special- and general-purpose machinery and parts thereof (4.0)
CPC Code: 43923 "Fire extinguishers; spray guns and similar appliances; steam or sand blasting machines and similar jet projecting machines; mechanical appliances for projecting, dispersing or spraying liquids or powders, except agricultural or horticultural appliances".

The PCR review was conducted by: *Lars-Gunnar Lindfors*. The PCR Review Chair can be contacted via the PCR Review Panel: International EPD® System Technical Committee, info@environdec.com.

Life Cycle Assessment (LCA)

LCA accountability: *Ollum S.r.l. – Via Fratelli Lumiere 19, 52100 (AR)*

Third-Party Verification

Independent third-party verification of the declaration and data, according to ISO 14025:2006, through:

☒ EPD verification by an accredited certification body

Third-party verification: Bureau Veritas Italia S.p.A. is an approved certification body responsible for third-party verification.

The certification body is accredited by: Accredia with accreditation number - 0009VV.

The procedure for data follow-up during the validity of the EPD involves the third-party verifier:

☐ Yes

☒ No

The owner of the EPD has sole ownership, responsibility, and responsibility for the EPD.

EPDs within the same product category but registered in different EPD programs may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on PCR or fully aligned versions of PCR; cover products with identical functions, technical performance and use (e.g. identical declared/functional units); have equivalent system boundaries and data descriptions; apply equivalent requirements on data quality, data collection methods and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have statements of equivalent content; and be valid at the time of comparison. For more information on comparability, see ISO 14025.

Company Information

EPD holder:

EMME Anticendio S.r.l.

Contact:

info@emme-italia.com

Description of the organization:

Emme, with over 50 years of experience, is a leader in the firefighting sector, offering a wide range of services of the highest quality. The "value proposition" is based on four fundamental pillars that distinguish it: reliability, consultancy, uniqueness and sustainability. The company pays the utmost attention to every detail, guaranteeing customers uncompromising security and complete assistance through dedicated and personalized advice. Emme's ability to provide creative and innovative solutions is designed to anticipate the future needs of our customers, while our strong commitment to environmental and social responsibility reflects its dedication to the well-being of the planet and the communities in which it operates.

Among the main services offered by Emme is the production and supply of fire extinguishers and fire-fighting products. Thanks to a network of qualified dealers, it supplies and sells high-quality fire extinguishers, firefighting products, signage, personal protective equipment and first aid equipment. Emme's offer is designed to meet every need, ensuring that each product meets the highest standards of safety and quality.

The company also offers the take-back of obsolete material, such as fire extinguishers, hoses and extinguishing agents. This service not only improves safety, but also contributes to sustainability and environmental protection, a value in which the company firmly believes.

The company organizes specific training courses for installers and maintenance technicians, as well as refresher courses. These courses are crucial for maintaining and developing the skills needed to effectively handle fire extinguishers and other firefighting devices, ensuring that personnel are always prepared to deal with any emergency. Continuous training is a key element to ensure maximum safety and competence, and Emme is proud to be able to offer educational support of the highest level.

Ultimately, by choosing Emme, you choose a partner dedicated to protection, security and innovation, always at the customer's side to ensure maximum peace of mind and protection.

Product or management system certifications:

ISO 9001:2015, ISO 9094:2015 and UNI EN 3-10

Name and location of the production site:

Via del Molino, 40, 52010 Corsalone AR

Product information

Product Family Name:

**Family of Fire Extinguishers kg 6 Powder -
34A 233BC - UNI EN 3-7 - 100%
Regenerated Powder.**

Product codes included:

- **21063-500**
- **21063-510**
- **21063-540**
- **21063-550**

Product identification:

34A 233BC - UNI EN 3-7

Product Description:

Powder fire extinguishers of 6 Kg, operating temperature from -30°C to +60°C, built in accordance with the UNI EN 3-7 standard (Ministerial Decree 7.1.2005), approved Marine

Equipment Directive MED 2014/90/EU, certified according to the directive for pressure equipment PED 2014/68/EU. Fire extinguishers made in compliance with production controls according to EN 3-10 standard. All fire extinguishers are voluntarily certified with a Product Quality control guaranteed by Bureau Veritas Italia. They can be used on live electrical equipment up to 1,000 V, at a minimum distance of 1 meter.

UN CPC Code:

43923 *"Fire extinguishers; spray guns and similar appliances; steam or sand blasting machines and similar jet projecting machines; mechanical appliances for projecting, dispersing or spraying liquids or powders, except agricultural or horticultural appliances"*.

Geographical scope: Europe

LCA Information

Functional unit:

1 pc (1 piece)

Reference Useful Life (RSL):

20 years

Time representativeness:

Year 2023

LCA databases and software used:

SimaPro v. 9.5.; Ecoinvent 3.9.

System Boundaries:

Cradle to grave with benefits (module D)

Objectives of the LCA study:

The aim of the LCA study was to analyse a family of products, in particular four fire extinguishers that share similar components, production processes and end-of-life methods. All four fire extinguishers use an extinguishing powder, specifically Regenerated ABC Powder with a 30% MAP (Monoammonium Phosphate) content (NTL30 - New Tech Lab).

Data Quality:

In the present LCA study, primary data are used for all quantities of materials and energy

used in the processes controlled by EMME Anticendio S.r.l. These include raw materials such as fire extinguisher components, packaging, auxiliary materials, electricity consumption from the machinery that carries out the assembly. Other vectors, such as water and heat resources, are not used in production. Specific data is used for waste generated internally during the assembly process and related disposal processes. Specific data are also used for incoming transport of materials. transport to customers. Data from the Ecoinvent 3.9 database was used to model processes such as raw material extraction and processing, production of basic materials, and other processes for which specific data could not be obtained. As far as the end of life of the products is concerned, the exhausted fire extinguishers are collected by EMME Anticendio S.r.l. at the various locations and sent to the New Tech Lab company in Poland for recycling. During the disassembly process, New Tech Lab separates steel, brass, aluminum and plastic components, which then follow different recycling or disposal routes. The exhausted powder is regenerated within the New Tech Lab plant and then sent back to EMME

Antincendio S.r.l. to be reused as a raw material in the assembly process of new fire extinguishers. For this phase, primary end-of-life data directly provided by New Tech Lab were used, such as emissions related to the extinguishing powder recycling process.

System Boundaries:

"Upstream":

- Extraction and production of raw materials for all major parts and components;
- Production of electricity and fuels used in the upstream module;
- Production of semi-finished products used in the core module;
- Production of primary and secondary packaging;
- Transport between raw material extraction and material processing;

"Core":

- Transport of materials, semi-finished products and packaging to the production site;
- Assembly process;
- Internal transport within the production plant;
- Maintenance (e.g., topping up lubricating oils);
- Treatment of waste generated during the production of the machine;
- Consumption of electricity and fuels used in core processes.

"Downstream":

- Product disassembly, including the impact of the disassembly process, transportation to waste management, and waste treatment.

"Benefits"

It is added that the benefits and burdens beyond the system boundary deriving from the reuse, recovery or recycling of materials and/or energy, including processes avoided or replaced due to these practices, have been reported. Materials that are not destined for recycling include plastic materials such as polyurethane, which are disposed of in

landfills, and components made up of multiple materials, such as the pressure gauge, which contains glass (silicon), polyurethane, bronze, brass, and steel.

Code	Weight [kg]	Percentage Recyclability
21063-500	9.9	96%
21063-510	9.7	96%
21063-540	10	96%
21063-550	9.7	96%

Cut-off:

Some unitary processes have been excluded. In particular, the energy used for the operation of the product, the consumption of chemicals and consumables used during normal use of the machine, for cleaning and maintenance of the equipment, including maintenance and spare parts consumption, were not considered. Only chemicals were considered and the production of spare parts was also excluded. As specified by the PCR, other aspects related to downstream processes and infrastructure have also been excluded in the present study. In particular, the production of production equipment, buildings and other capital goods were not considered. In addition, the study does not include the construction, maintenance, decommissioning and disposal of service facilities. Staff business travel and travel to and from employees' workplace are also outside the scope of the study. Finally, all research and development activities are excluded.

Allocation:

A mass unit allocation was made for the collected data on raw materials, related transport, packaging waste, production waste and consumables. Electricity consumption was distributed according to the total quantity of fire extinguishers produced. For all downstream modules, mass unit allocations were made. Knowing the weights of the individual fire extinguishers included in the product family, it was therefore possible to allocate the right amount of resources to each product.

Content information

Family of Fire Extinguishers kg 6 Powder - 34A 233BC - UNI EN 3-7 - 100% Regenerated Powder

Product components - % by weight of total

Material	21063-500	21063-510	21063-540	21063-550
Regenerated ABC Powder (30% MAP)	60,73%	62,00%	59,91%	61,90%
Steel	30,81%	31,45%	32,58%	29,42%
Brass	4,72%	0,09%	3,82%	4,81%
Aluminium	0,00%	2,62%	0,00%	0,00%
Rubber	0,02%	0,02%	0,01%	0,02%
Plastic	0,57%	0,58%	0,55%	0,62%
Nitrogen	1,16%	1,19%	1,15%	1,19%
Other	2,00%	2,05%	1,98%	2,04%

Rubber, specifically polyurethane, is used for gaskets; polyvinyl chloride (PVC) for the label and dip tube; the low alloy steel for the casing, the pin, the safety spring and the valve levers; brass for the valve and piston, as well as aluminum. Other components combine different materials: the hose is made of brass and PVC, the safety valve of steel and brass, and the pressure gauge is made of brass, bronze, steel and polyurethane.

Substances of Very High Concern for Substances of Very High Concern for ECHA - Substances of Very High Concern for Authorisation (<https://echa.europa.eu/it/candidate-list-table>)

Packaging

Packaging for distribution:

The products are available in various packaging materials such as outer film, isothermal blanket, cardboard box, bubble wrap (polyethylene with air bubbles) and wooden pallet. The weights of the packaging materials, with the exception of the bubble wrap, were collected for a batch of 50 pieces and then calculated for each fire extinguisher.

Product Code	Type of Packaging	Quantity
21063-500/510/540/550	Outer Film	0.004 kg
21063-500/510/540/550	Isothermal blanket	0.001 kg
21063-500/510/540/550	Box	0.12 kg
21063-500/510/540/550	Bubble wrap	0.013 kg
21063-500/510/540/550	Pallet	0.0112 p

Recycled material

Post-consumer recycled material in the product:

More than the majority of each product has recycled material inside.

In particular, the Regenerated ABC Powder, MAP 30% (NTL30 - New Tech Lab), which cubes 6 kg per fire extinguisher.

Recycled material - % by weight of total

21063-500	21063-510	21063-540	21063-550
60,73%	62,00%	59,91%	61,90%

It is added that the steel used, as well as brass and aluminum are materials that are partially recycled. Since the precise amount of recycled material was not known, the default percentage in the Ecoinvent 3.9 datasets for the global market for such material was applied.

Environmental performance

The average results of the various indicators of the environmental impact, use of resources and waste categories produced for the **Family of Fire Extinguishers kg 6 Powder - 34A 233BC - UNI EN 3-7 - 100% Regenerated Powder** composed of the four fire extinguishers **21063 – 500/510/540/550** are reported.

<i>Impact categories</i>	<i>Nomenclature</i>	<i>Unit</i>	<i>Total</i>	<i>Upstream</i>	<i>Core</i>	<i>Downstream</i>	<i>Benefits (Module D)</i>
<i>Acidification Potential</i>	AP	mol H+ eq	3.19E-01	2.86E-01	2.41E-02	9,34E-03	-1,53E-01
<i>Global warming Potential - Total</i>	GWP - Total	kg CO2 eq	2,40E+01	1,93E+01	1,87E+00	2,89E+00	-7,23E+00
<i>Global warming Potential – Biogenic</i>	GWP - Biogenic	kg CO2 eq	1.56E-01	5.42E-01	-3.89E-01	2.65E-03	4.91E-02
<i>Global warming Potential - Fossil</i>	GWP - Fossil	kg CO2 eq	2,39E+01	1,87E+01	2,25E+00	2,88E+00	-7,25E+00
<i>Global warming Potential - Land use and LU change</i>	GWP - Luluc	kg CO2 eq	3.15E-02	2.71E-02	3.04E-03	1.38E-03	-2.29E-02
<i>Eutrophication Potential, marine</i>	EP - marine	kg N eq	3.61E-02	2.61E-02	6.79E-03	3.26E-03	-1.11E-02
<i>Eutrophication Potential, freshwater</i>	EP - freshwater	kg P eq	2.38E-02	2.33E-02	3.27E-04	2.01E-04	-1.25E-02
<i>Eutrophication Potential, terrestrial</i>	EP - terrestrial	mol N eq	4.12E-01	3.05E-01	7,33E-02	3,40E-02	-1,46E-01
<i>Ozone depletion Potential</i>	ODP	kg CFC11 eq	1.92E-06	1.82E-06	4.40E-08	6.26E-08	8,74E-06
<i>Photochemical ozone formation Potential</i>	POCP	kg NMVOC eq	1.42E-01	1.06E-01	2.19E-02	1.39E-02	-4,86E-02
<i>Resource use Potential, fossil</i>	ADP - fossil	MJ	2,92E+02	2,20E+02	3,19E+01	4,02E+01	-7,38E+01
<i>Resource use Potential, minerals and metals</i>	ADP - minerals&metals	kg Sb eq	3.04E-03	3.02E-03	5,58E-06	9.03E-06	-1.65E-03
<i>Water deprivation Potential</i>	WDP	m3 depriv.	4,82E+00	4,26E+00	2.86E-01	2.74E-01	-2,86E+00
Use of Resources	Nomenclature	Unit	Total	Upstream	Core	Downstream	Benefits (Module D)
<i>Non-renewable primary energy as energy carrier</i>	PENRE	MJ	7,21E+01	0.00E+00	3,19E+01	4,02E+01	-7,89E+01
<i>Non-renewable primary energy as material utilization</i>	PENRM	MJ	2,20E+02	2,20E+02	0.00E+00	0.00E+00	0.00E+00
<i>Total use of non-renewable primary energy resources</i>	PENRT	MJ	2,92E+02	2,20E+02	3,19E+01	4,02E+01	-7,89E+01
<i>Renewable primary energy as energy carrier</i>	PEARS	MJ	9,79E+00	0.00E+00	9,16E+00	6.31E-01	-4,76E+00
<i>Renewable primary energy resource as material utilization</i>	PERM	MJ	2,27E+01	2,27E+01	0.00E+00	0.00E+00	0.00E+00
<i>Total use of renewable primary energy resources</i>	PERT	MJ	3,25E+01	2,27E+01	9,16E+00	6.31E-01	-4,76E+00
Waste produced	Nomenclature	Unit	Total	Upstream	Core	Downstream	Benefits (Module D)
<i>Hazardous waste disposed</i>	HWD	Kg	2.64E-02	2.10E-03	6.64E-02	5.89E-03	2.64E-02
<i>Non-hazardous waste disposed</i>	NHWD	Kg	4,02E+00	8,52E-01	5,54E+00	5.07E-01	4,02E+00
<i>Radioactive waste disposed</i>	RWD	Kg	2.77E-04	3,50E-05	1.31E-05	-6,63E-05	2.77E-04

References

1. ISO 14040:2006 "Principles and framework" which sets out the principles and the reference framework
2. for life cycle assessment and a description of the structure of an LCA analysis
3. ISO 14044:2006 "Requirements and guidelines" which is the main support for
4. The practical application of a life cycle study
5. ISO 14040:2006/AMD 1:2020
6. ISO 14044:2006/AMD 1:2017
7. ISO 14044:2006/AMD 2:2020
8. UNI EN ISO 14025 :2010, Environmental labels and declarations — Type III environmental
9. declarations — Principles and procedures (ISO 14025:2006)
10. General Programme Instructions for the International EPD® System – Version 3.01
11. Product Category Rules (PCR) 2010:08 - Other special-purpose machinery and parts thereof. Version 3.01.
12. Special Waste Report, 2023 Edition, ISPRA -
<https://www.isprambiente.gov.it/it/pubblicazioni/rapporti/rapporto-rifiuti-speciali-edizione-2023>

