Product environnemental profile

Fuse NH0 500V GG

PRODUCT DESCRIPTION

Type “gG” NH fuse-links are full range breaking capacity fuse-links and are used to protect cables and equipment. They can interrupt any current surge, from the lowest fusing current up to their breaking capacity, and so can be used alone as protection. They also protect electrical devices and industrial set-ups from the electrodynamic effects of very high short-circuit currents.

The rated voltage is 500V AC and the breaking capacity is 120 kA.

These fuses comply with IEC 60269-1 and 2 standard and with VDE-0636-part 201 standards

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PRODUCT REFERENCE

The product selected as reference is the highest rating of the range. It is the one using the most of raw materials.



Designation: Fuse NH0 250A 500V GG
Reference: E229613
Mass: 270g (with packaging)

Functional unit: Protect equipment downstream of the circuit from the effects of an overload or a short circuit by interrupting the fault current for a reference lifetime of 20 years.

Fuses are into the "other electrical equipment, passive product" category of PSR-0005. This scenario corresponds to use at 30% of rated current for a total operating time of 30% of its lifetime.

Fuse NH0 500V GG

PRODUCT RANGE

NH0			
Référence	**Désignation**	**Référence**	**Désignation**
H213148	NH0 6 A 500V GG	N218765	NH0 63 A 500V GG
G214159	NH0 10 A 500V GG	C219284	NH0 80 A 500V GG
Q215179	NH0 16 A 500V GG	D219814	NH0 100 A 500V GG
R215686	NH0 20 A 500V GG	P222492	NH0 125 A 500V GG
Y216198	NH0 25 A 500V GG	F223013	NH0 160 A 500V GG
W216702	NH0 32 A 500V GG	C229611	NH0 200 A 500V GG
J217220	NH0 35 A 500V GG	D229612	NH0 224 A 500V GG
P217731	NH0 40 A 500V GG	E229613	NH0 250 A 500V GG
Z218246	NH0 50 A 500V GG		

BILL OF MATERIALS

Metals			Others		
Designation	**Mass (g)**	**%**	**Designation**	**Mass (g)**	**%**
Brass	51,30	19,14%	Ceramic	127,64	47,63%
Aluminium	15,70	5,86%	Sand	50,60	18,88%
Steel	5,80	2,16%	Cardboard	11,11	4,14%
Copper	3,58E+00	1,34%	Felted cardboard	1,40E+00	< 0,1%
Tin	2,28E-01	< 0,1%	Paper	2,60E-01	< 0,1%
Lead	1,03E-01	< 0,1%	PBT GF30	1,20E-01	< 0,1%
Copper Nickel alloy	3,60E-02	< 0,1%	PA 66 GF30	1,00E-01	< 0,1%
Silver	1,12E-02	< 0,1%	Ink	1,90E-02	< 0,1%
TOTAL	**76,74**	**28,64%**	**TOTAL**	**191,23**	**71,36%**

LYFE CYCLE

The Life Cycle Analysis is realized in compliance with ISO 14 040 and 14 044 standards and with the EIME© v5.9.3 software with the database version CODDE-2022-01.

The analysis of this product and its range represents a Hungarian manufacture and a European use.

MANUFATURING

These products are manufactured in the factory located in Hungary. This is an assembly process with no major impact on the environment. For the electrical consumption of this assembly process, the local energy mix has been used.

In addition, the Hungarian manufacturing site is ISO 14001 certified.

DISTRIBUTION

The market for these fuses is in Europe. The transport is done by road.

INSTALLATION

The fuse is mounted by hand with no power or additional equipment. All energy mixes used for end-of-life treatment of packaging are based on European data.

USE

In normal use, a fuse consumes energy through heat dissipation. It doesn't emit noise or electromagnetic radiation and doesn't require maintenance. The energy mix used is based on European data.

Fuses are into the PSR-005 category "other electrical equipment, passive product".

This scenario corresponds to use at 30% of rated current, which is 0.07 times the power dissipation in watt, *(20.3 x 0.07) x 3600 = 5116 joules per hour*, for a total operating time of 30% of its lifetime (20 years), *(20 x 365) x (0.3 x 24) = 52560 hours*.

The total consumption of the reference product is 5116 x 52560=268.9 megajoules.

END OF LIFE

This product family is listed in the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE). The products must be reprocessed in compliance with the legislation of the country. All energy mixes used are based on European data.

ENVIRONMENTAL IMPACTS

Environmental impact indicators

Environmental indicators \ Lifecycle phase	1. Manufacturing	2. Distribution	3. Installation	4. Use	5. End of life	Total	Module D	Unit
Resource use, minerals and metals (PEF-ADPe)	1,34E-04	1,24E-11	5,99E-10	2,22E-06	6,58E-08	1,37E-04	-6,35E-05	kg SB eq.
	98,33%	0*	0*	1,62%	0,05%			
Resource use, fossils (PEF-ADPf)	2,08E+01	1,76E+00	1,86E-01	7,80E+02	1,25E+00	8,04E+02	-3,36E+00	MJ
	2,59%	0,22%	0,02%	97,02%	0,16%			
Acidification (PEF-AP)	1,48E-02	6,29E-04	7,10E-05	1,75E-01	1,91E-03	1,92E-01	-1,91E-02	mol H+ eq.
	7,69%	0,33%	0,04%	90,95%	1,00%			
Ecotoxicity, freshwater (PEF-CTUe)	5,49E+01	5,93E-01	1,34E-01	3,30E+02	4,65E+01	4,32E+02	-1,32E+02	CTUe
	12,72%	0,14%	0,03%	76,35%	10,76%			
Human toxicity, cancer (PEF-CTUh-c)	8,03E-07	2,04E-12	6,58E-09	3,57E-09	1,55E-10	8,13E-07	-2,41E-09	CTUh
	98,73%	0*	0,81%	0,44%	0,02%			
Human toxicity, non-cancer (PEF-CTUh-nc)	2,01E-07	3,82E-10	9,81E-11	1,42E-07	1,47E-08	3,57E-07	-2,13E-07	CTUh
	56,14%	0,11%	0,03%	39,60%	4,13%			
Eutrophication, freshwater (PEF-Epf)	3,90E-05	1,69E-08	1,33E-07	8,38E-05	4,25E-06	1,27E-04	-1,80E-03	kg P eq.
	30,67%	0,01%	0,10%	65,87%	3,34%			
Eutrophication marine (PEF-Epm)	1,26E-03	2,89E-04	1,87E-05	1,98E-02	1,28E-03	2,27E-02	-9,40E-04	kg N eq.
	5,57%	1,27%	0,08%	87,45%	5,63%			
Eutrophication, terrestrial (PEF-Ept)	1,38E-02	3,13E-03	1,35E-04	2,98E-01	9,94E-04	3,16E-01	-1,18E-02	mol N eq.
	4,37%	0,99%	0,04%	94,28%	0,31%			
Climate change (PEF-GWP)	1,54E+00	1,45E-01	1,84E-02	3,06E+01	8,29E-02	3,24E+01	-3,20E-01	kg CO2 eq.
	4,74%	0,45%	0,06%	94,50%	0,26%			
Climate change-Biogenic (PEF-GWPb)	1,84E-01	0,00E+00	8,18E-04	4,08E-02	4,94E-03	2,30E-01	-2,79E-02	kg CO2 eq.
	79,77%	0,00%	0,36%	17,73%	2,15%			
Climate change-Fossil (PEF-GWPf)	1,35E+00	1,45E-01	1,75E-02	3,06E+01	7,79E-02	3,22E+01	-2,92E-01	kg CO2 eq.
	4,21%	0,45%	0,05%	95,05%	0,24%			
Climate change-Land use and land use change (PEF-GWPlu)	4,71E-07	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,71E-07	0,00E+00	kg CO2 eq.
	100,00%	0,00%	0,00%	0,00%	0,00%			
Ionising radiation, human health (PEF-IR)	1,50E+02	3,21E-04	8,63E-04	4,55E+01	8,49E-03	1,96E+02	-1,02E+01	kg U235 eq.
	76,72%	0*	0*	23,27%	0*			
Land use (PEF-LU)	2,36E-01	0,00E+00	0,00E+00	6,09E-01	4,16E-01	1,26E+00	-1,94E+00	no dimension
	18,73%	0,00%	0,00%	48,30%	32,97%			
Ozone depletion (PEF-ODP)	2,97E-07	1,28E-07	1,22E-09	1,31E-07	9,62E-09	5,66E-07	-1,48E-08	kg CFC-11 eq.
	52,44%	22,54%	0,22%	23,11%	1,70%			
EF-particulate Matter (PEF-PM)	9,74E-08	1,71E-09	4,67E-10	1,35E-06	5,71E-09	1,46E-06	-4,43E-08	disease occurence
	6,67%	0,12%	0,03%	92,79%	0,39%			
Photochemical ozone formation - human health (PEF-POCP)	4,71E-03	1,03E-03	3,63E-05	6,37E-02	3,53E-04	6,98E-02	-3,38E-03	kg NMVOC eq.
	6,74%	1,47%	0,05%	91,23%	0,51%			
Water use (PEF-WU)	3,72E+00	7,34E-03	7,96E-03	1,02E+00	2,72E+01	3,20E+01	-2,11E+02	m3 eq.
	11,63%	0,02%	0,02%	3,18%	85,14%			

0 (*) represent less than 0,01% of the total lifecycle reference flow

Fuse NH0 500V GG

Resources use indicators

Lifecycle phase / Ressources use	1. Manufacturing	2. Distribution	3. Installation	4. Use	5. End of life	Total	Module D	Unit
Total Primary Energy	2,51E+01	1,76E+00	2,00E-01	9,29E+02	1,39E+00	9,58E+02	-4,73E+00	MJ
	2,62%	0,18%	0,02%	97,03%	0,14%			
Use of renewable primary energy excluding renewable primary energy used as raw material	4,00E+00	1,18E-05	1,37E-02	1,50E+02	1,37E-01	1,54E+02	-1,28E+00	MJ
	2,60%	0*	0*	97,30%	0,09%			
Use of renewable primary energy resources used as raw material	3,08E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,08E-01	-8,09E-02	MJ
	100,00%	0,00%	0,00%	0,00%	0,00%			
Total use of renewable primary energy resources	4,31E+00	1,18E-05	1,37E-02	1,50E+02	1,37E-01	1,54E+02	-1,36E+00	MJ
	2,80%	0*	0*	97,11%	0,09%			
Use of non renewable primary energy excluding non renewable primary energy used as raw material	2,08E+01	1,76E+00	1,86E-01	7,80E+02	1,25E+00	8,04E+02	-3,36E+00	MJ
	2,59%	0,22%	0,02%	97,02%	0,16%			
Use of non renewable primary energy resources used as raw material	8,55E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,55E-03	0,00E+00	MJ
	100,00%	0,00%	0,00%	0,00%	0,00%			
Total use of non-renewable primary energy resources	2,08E+01	1,76E+00	1,86E-01	7,80E+02	1,25E+00	8,04E+02	-3,36E+00	MJ
	2,59%	0,22%	0,02%	97,02%	0,16%			
Use of secondary material	5,40E-06	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,40E-06	0,00E+00	MJ
	100,00%	0,00%	0,00%	0,00%	0,00%			
Use of renewable secondary fuels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MJ
	0,00%	0,00%	0,00%	0,00%	0,00%			
Use of non renewable secondary fuels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MJ
	0,00%	0,00%	0,00%	0,00%	0,00%			
Net use of freshwater	8,47E-02	1,71E-04	9,25E-05	2,50E-02	4,77E-02	1,58E-01	-2,08E+00	m3
	53,71%	0,11%	0,06%	15,89%	30,24%			
Biogenic carbon content in the product	3,92E-04	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,92E-04	0,00E+00	kg of C
	100,00%	0,00%	0,00%	0,00%	0,00%			
Biogenic carbon content in the packaging	3,21E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	3,21E-03	0,00E+00	kg of C
	100,00%	0,00%	0,00%	0,00%	0,00%			

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Waste category indicators

Lifecycle phase / Waste indicators	1. Manufacturing	2. Distribution	3. Installation	4. Use	5. End of life	Total	Module D	Unit
Hazardous waste disposed	5,15E+00	1,20E-04	2,18E-04	5,72E-01	4,08E-05	5,72E+00	0,00E+00	kg
	90,00%	0*	0*	9,99%	0*			
Non hazardous waste disposed	1,75E+00	1,47E-04	6,11E-02	4,40E+00	1,85E-01	6,40E+00	-7,33E-04	kg
	27,35%	0*	0,96%	68,81%	2,89%			
Radioactive waste disposed	9,14E-04	2,88E-05	8,03E-06	9,22E-04	8,06E-07	1,87E-03	0,00E+00	kg
	48,80%	1,54%	0,43%	49,19%	0,04%			

0 (*) represent less than 0,01% of the total lifecycle reference flow

Output flow indicators

Lifecycle phase / Other indicators	1. Manufacturing	2. Distribution	3. Installation	4. Use	5. End of life	Total	Module D	Unit
Component for reuse	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	kg
	0,00%	0,00%	0,00%	0,00%	0,00%			
Materials for recycling	1,38E-01	0,00E+00	1,01E-02	0,00E+00	6,72E-02	2,15E-01	0,00E+00	kg
	64,03%	0,00%	4,70%	0,00%	31,27%			
Materials for energy recovery	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	kg
	0,00%	0,00%	0,00%	0,00%	0,00%			
Exported energy	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MJ
	0,00%	0,00%	0,00%	0,00%	0,00%			

0 (*) represent less than 0,01% of the total lifecycle reference flow

Extrapolation rules

To obtain impacts of the use phase, the following coefficients must be applied:

Désignation	Puissance dissipée à In (W)	Coefficient à appliquer
NH0 6 A 500V GG	1,6	**0,08**
NH0 10 A 500V GG	1,1	**0,05**
NH0 16 A 500V GG	1,8	**0,09**
NH0 20 A 500V GG	2,3	**0,11**
NH0 25 A 500V GG	2,4	**0,12**
NH0 32 A 500V GG	3,1	**0,15**
NH0 35 A 500V GG	3	**0,15**
NH0 40 A 500V GG	3,7	**0,18**
NH0 50 A 500V GG	4,1	**0,20**
NH0 63 A 500V GG	6,6	**0,33**
NH0 80 A 500V GG	8	**0,39**
NH0 100 A 500V GG	9,4	**0,46**
NH0 125 A 500V GG	11,8	**0,58**
NH0 160 A 500V GG	14,6	**0,72**
NH0 200 A 500V GG	18,1	**0,89**
NH0 224 A 500V GG	19,2	**0,95**
NH0 250 A 500V GG	20,3	**1,00**

For the manufacturing, distribution, installation and end of life phases, the impacts are covered by those of the reference product.

POTENTIAL RECYCLABILITY

End of life of the product	Rate (%)
Recyclable component	**26,0%**
Incinerated components	**0,3%**
Waste	**73,7%**

This estimation has been calculated with EIME© v5.9.3 software with the Eco'DEEE methodology.

CHECKS

Registration N° : MERS-00060-V01.01-EN	**Drafting rules :** PCR-ed4-EN-2021 09 06 Supplemented by PSR-0005-ed2-FR-2016 03 29
Verifier accreditation N° : VH32	**Information and reference documentation :** www.pep-ecopassport.org
Date of issue : 20/10/2022	**Validity period :** 5 years
Independent verification of the declaration and data, in compliance with ISO 14025 : 2010 ☐ internal ☒ external	
The PCR review was conducted by a panel of experts chaired by Julie ORGELET (DDemain)	
PEP are compliant with XP C08-100-1 :2016 or EN 50693 :2019 The elements of the present PEP cannot be compared with elements from another program.	
Document in compliance with ISO 14025 : 2010 « Environmental labels and declarations. Déclarations environnementales de Type III"	