

Environmental product declaration

in accordance with ISO 14025 and EN 15804+A2

KVK Silent 100 EC



The Norwegian EPD Foundation

Owner of the declaration:

Systemair Production AB

Product:

KVK Silent 100 EC

Declared unit:

1 pcs

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR

NPCR 030:2021 Part B for ventilation components

Program operator:

The Norwegian EPD Foundation

Declaration number:

NEPD-11718-11645

Issue date:

07.07.2025

Valid to:

07.07.2030

EPD software:

LCAno EPD generator ID: 992484

General information

Product

KVK Silent 100 EC

Program operator:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo, Norway
Phone: +47 977 22 020
web: www.epd-norge.no

Declaration number:

NEPD-11718-11645

This declaration is based on Product Category Rules:

CEN Standard EN 15804:2012+A2:2019 serves as core PCR
NPCR 030:2021 Part B for ventilation components

Statement of liability:

The owner of the declaration shall be liable for the underlying information and evidence. EPD Norway shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

Declared unit:

1 pcs KVK Silent 100 EC

Declared unit with option:

A1-A3, A4, C1, C2, C3, C4, D

Functional unit:

Not declared.

General information on verification of EPD from EPD tools:

Independent verification of data, other environmental information and the declaration according to ISO 14025:2010, § 8.1.3 and § 8.1.4. Verification of each EPD is made according to EPD-Norway's guidelines for verification and approval requiring that tools are i) integrated into the company's environmental management system, ii) the procedures for use of the EPD tool are approved by EPD-Norway, and iii) the process is reviewed annually by an independent third party verifier. See Appendix G of EPD-Norway's General Programme Instructions for further information on EPD tools

Verification of EPD tool:

Independent third party verification of the EPD tool, background data and test-EPD in accordance with EPDNorway's procedures and guidelines for verification and approval of EPD tools.

Third party verifier:

Alexander Borg, Asplan Viak AS

(no signature required)

Owner of the declaration:

Systemair Production AB
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Phone: +46 222 440 00
e-mail: mailbox@systemair.se

Manufacturer:

Systemair Production AB

Place of production:

Systemair Production AB
Industrivägen 3
739 30 Skinnskatteberg, Sweden

Management system:

ISO 9001, ISO 14001

Organisation no:

559000-1516

Issue date:

07.07.2025

Valid to:

07.07.2030

Year of study:

2024

Comparability:

EPDs of construction products may not be comparable if they do not comply with EN 15804 and are not seen in a building context.

Development and verification of EPD:

The declaration is created using EPD tool lca.tools ver EPD2022.03, developed by LCA.no. The EPD tool is integrated in the company's management system and has been approved by EPD Norway. NEPDT75 Systemair AB

Developer of EPD: Marie W. Andersson

Reviewer of company-specific input data and EPD: Karolina Persson

Approved:



Håkon Hauan, CEO EPD-Norge

Product

Product description:

The KVK SILENT fans combine a high efficient fan and casing with perfect acoustic and thermal insulation capacity. The KVK Silent fans are intended to use for supply or extract air, designed to be installed in any position. This ensures that the fans can be used in a variety of commercial and domestic applications.

Product specification

KVK SILENT fans range from size 100 to 500 with capacities from approximately 329 m³/h to 6,214 m³/h. The EPD data is provided for size 100 (reference)

Materials	kg	%
Adhesive	0,02228	0,1153
Electronic - Unspecified	0,003	0,01553
Insulation, Mineral based	8,14	42,14
Metal - Aluminium	0,164	0,8492
Metal - Galvanized Steel	4,34	22,47
Metal - Steel	0,082	0,4246
Metal - Steel with aluzinc coating	5,02	25,99
Motor	1,20	6,21
Other	0,104	0,5385
Plastic - Polyamide	0,04	0,2071
Plastic - Polycarbonate (PC)	0,02	0,1036
Plastic - Polyethylene	0,01188	0,06152
Plastic - Polystyrene (PS)	0,10	0,5178
Plastic - Polyvinyl chloride (PVC)	0,00789	0,04086
Plastics	0,048	0,2485
Rubber, synthetic	0,01	0,05178
Total	19,31	100,00

Packaging	kg	%
Packaging - Cardboard	0,70	85,89
Packaging - Paper	0,11	12,88
Packaging - Plastic	0,01	1,23
Total incl. packaging	20,13	100,00

Technical data:

Casing made of AluZinc 185 (corrosion class C4). Acoustically/thermally insulated lid and casing. Casing has connection spigot with rubber seals. For more information see <https://www.systemair.com/en>

Size	Weight [kg]	GWP tot. (A1-A3) [CO ₂ eq]	Factor [-]
100	20.1	49.3	1
125	20.1	49.8	1.01
160	18.1	52.2	1.06
200	23.6	63.6	1.29
250	30.4	80.4	1.63
315	50.2	150.8	3.06
355	69.8	200.9	4.08
400	69.1	199.4	4.04
500	112.9	273.1	5.54

Market:

Europe

Reference service life, product

Not declared, dependent on the application of the product.

Reference service life, building or construction works

Not declared.

LCA: Calculation rules

Declared unit:

1 pcs KVK Silent 100 EC

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Energy, water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

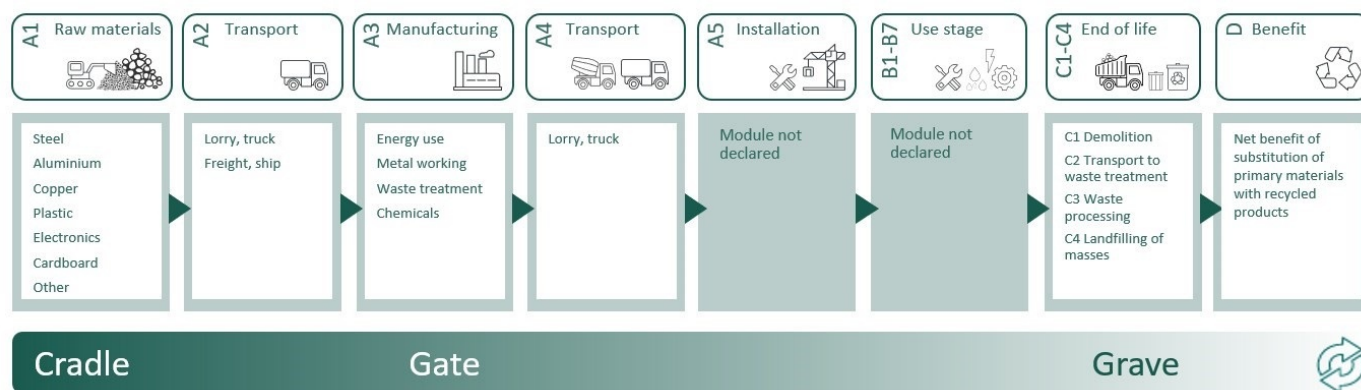
Specific data for the product composition are provided by the manufacturer. The data represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on EPDs according to EN 15804 and different LCA databases. The data quality of the raw materials in A1 is presented in the table below.

Materials	Source	Data quality	Year
Adhesive	ecoinvent 3.6	Database	2019
Electronic - Unspecified	ecoinvent 3.6	Database	2019
Insulation, Mineral based	ecoinvent 3.6	Database	2019
Metal - Aluminium	Modified ecoinvent 3.6	Database	2019
Metal - Galvanized Steel	Modified ecoinvent 3.6	Database	2019
Metal - Steel	ecoinvent 3.6	Database	2019
Metal - Steel with aluzinc coating	Modified ecoinvent 3.6	Database	2019
Motor	ecoinvent 3.6	Database	2019
Other	Material composition + ecoinvent 3.6	Supplier data + database	2019
Packaging - Cardboard	ecoinvent 3.6	Database	2019
Packaging - Paper	ecoinvent 3.6	Database	2019
Packaging - Plastic	ecoinvent 3.6	Database	2019
Plastic - Polyamide	ecoinvent 3.6	Database	2019
Plastic - Polycarbonate (PC)	ecoinvent 3.6	Database	2019
Plastic - Polyethylene	ecoinvent 3.6	Database	2019
Plastic - Polystyrene (PS)	ecoinvent 3.6	Database	2019
Plastic - Polyvinyl chloride (PVC)	ecoinvent 3.6	Database	2019
Plastics	ecoinvent 3.6	Database	2019
Rubber, synthetic	ecoinvent 3.6	Database	2019

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage	Use stage								End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery- Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:



Additional technical information:

Complete project specific technical documentation is generated using our online product selection software, Systemair Configurator. Please refer to the Systemair website for more information.

LCA: Scenarios and additional technical information

The following information describe the scenarios in the different modules of the EPD.










For A4 a generic transportation distance (EURO6 truck) of 300 km is declared. True transportation distance can be provided in project specific EPD.

For C2 a generic transportation distance (EURO6 truck) of 50 km is declared. True transportation distance can be provided in project specific EPD

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, over 32 tonnes, EURO 6 (km)	53,3 %	300,00	0,023	l/tkm	6,90
De-construction demolition (C1)	Unit	Value			
Demolition of building per kg of ventilation product (kg)	kg	19,30			
Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, over 32 tonnes, EURO 6 (km)	53,3 %	50,00	0,023	l/tkm	1,15
Waste processing (C3)	Unit	Value			
Waste treatment per kg Hazardous waste, incineration (kg)	kg	0,02228			
Materials to recycling (kg)	kg	9,78			
Waste treatment per kg wire plastic, municipal incineration (kg)	kg	0,02427			
Waste treatment per kg Electronics scrap, Control units, incineration (kg)	kg	0,003			
Waste treatment per kg Plastics, from incineration (kg)	kg	0,104			
Waste treatment per kg bulk waste, excluding reinforcement, sorting plant (kg)	kg	1,20			
Waste treatment per kg Polyethylene (PE), incineration (kg)	kg	0,00594			
Waste treatment per kg Polyvinylchloride (PVC), incineration (kg)	kg	0,003945			
Waste treatment per kg Rubber, incineration (kg)	kg	0,01			
Disposal (C4)	Unit	Value			
Landfilling of ashes from incineration per kg Hazardous waste, process per kg ashes and residues (kg)	kg	0,00421			
Waste, aluminium, to landfill (kg)	kg	0,01904			
Waste, copper, to landfill (kg)	kg	0,02475			
Waste, plastic, mixture, to landfill (kg)	kg	0,1382			
Landfilling of ashes from incineration per kg wire plastic, process per kg ashes and residues (kg)	kg	0,003609			
Landfilling of ashes from incineration of Electronics scrap, Control units, process of ashes and residues (kg)	kg	0,002105			
Landfilling of ashes from incineration of Plastics, process per kg ashes and residues (kg)	kg	0,002446			
Waste, mineral wool, to landfill (kg)	kg	8,14			
Waste, steel, to landfill (kg)	kg	1,03			
Landfilling of ashes from incineration of Polyethylene (PE), process per kg ashes and residues (kg)	kg	0,0002093			
Landfilling of ashes from incineration of Polyvinylchloride (PVC), process per kg ashes and residues (kg)	kg	0,0006285			
Landfilling of ashes from incineration of Rubber, process per kg ashes and residues (kg)	kg	0,0005229			
Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of electricity (MJ)	MJ	0,05942			
Substitution of thermal energy, district heating (MJ)	MJ	0,8989			
Substitution of primary aluminium with net scrap (kg)	kg	0,1091			
Substitution of primary copper with net scrap (kg)	kg	0,1136			
Substitution of primary steel with net scrap (kg)	kg	5,97			

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact									
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D	
 GWP-total	kg CO ₂ -eq	4.93E+01	5.26E-01	2.55E-02	8.76E-02	4.08E-01	6.68E-02	-7.85E+00	
 GWP-fossil	kg CO ₂ -eq	4.90E+01	5.25E-01	2.54E-02	8.75E-02	4.08E-01	6.67E-02	-7.82E+00	
 GWP-biogenic	kg CO ₂ -eq	1.62E-01	2.25E-04	4.77E-06	3.75E-05	2.13E-04	3.76E-05	-9.35E-03	
 GWP-luluc	kg CO ₂ -eq	1.31E-01	1.60E-04	2.01E-06	2.67E-05	2.11E-05	1.39E-05	-2.18E-02	
 ODP	kg CFC11 -eq	3.58E-06	1.27E-07	5.50E-09	2.11E-08	8.73E-09	2.06E-08	-3.80E-04	
 AP	mol H ⁺ -eq	5.44E-01	1.69E-03	2.66E-04	2.82E-04	1.46E-04	4.73E-04	-8.49E-02	
 EP-FreshWater	kg P -eq	2.92E-03	4.18E-06	9.26E-08	6.96E-07	1.52E-06	5.72E-07	-7.50E-04	
 EP-Marine	kg N -eq	5.68E-02	3.70E-04	1.18E-04	6.17E-05	3.93E-05	1.80E-04	-9.47E-03	
 EP-Terrestrial	mol N -eq	1.45E+00	4.13E-03	1.29E-03	6.88E-04	4.21E-04	1.81E-03	-1.07E-01	
 POCP	kg NMVOC -eq	2.38E-01	1.62E-03	3.54E-04	2.70E-04	1.12E-04	5.26E-04	-4.39E-02	
 ADP-minerals&metals ¹	kg Sb-eq	2.34E-02	9.36E-06	3.90E-08	1.56E-06	3.63E-07	5.10E-07	-3.67E-04	
 ADP-fossil ¹	MJ	6.21E+02	8.53E+00	3.50E-01	1.42E+00	3.25E-01	1.40E+00	-7.01E+01	
 WDP ¹	m ³	8.22E+03	6.54E+00	7.44E-02	1.09E+00	3.02E+00	1.35E+00	-2.01E+02	

GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator







Remarks to environmental impacts

This fan uses electric energy for fan drive. The resulting environmental impact is highly project specific and vary depending on:

- Air flow
- External pressure
- Operating hours
- Electricity origin

Energy use is fundamental in determining the environmental impact of this product and must be calculated with project specific values, please refer to our website for more information.

Additional environmental impact indicators











Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
 PM	Disease incidence	7.82E-05	4.82E-08	7.05E-09	8.04E-09	1.57E-09	9.17E-09	-7.07E-07
 IRP ²	kgBq U235 -eq	3.19E+00	3.73E-02	1.50E-03	6.21E-03	1.61E-03	5.84E-03	-3.35E-02
 ETP-fw ¹	CTUe	2.53E+03	6.24E+00	1.91E-01	1.04E+00	4.03E+00	1.29E+01	-8.01E+02
 HTP-c ¹	CTUh	3.21E-07	0.00E+00	0.00E+00	0.00E+00	7.40E-11	5.94E-10	-4.00E-08
 HTP-nc ¹	CTUh	3.80E-06	6.03E-09	1.74E-10	1.01E-09	1.38E-09	4.01E-08	1.51E-07
 SQP ¹	dimensionless	3.07E+02	9.78E+00	4.44E-02	1.63E+00	1.24E-01	3.17E+00	-1.01E+01

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Potential Soil Quality Index (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.




Resource use									
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D	
 PERE	MJ	8.50E+01	1.07E-01	1.89E-03	1.79E-02	5.56E-02	1.58E-02	-1.04E+01	
 PERM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	
 PERT	MJ	8.50E+01	1.07E-01	1.89E-03	1.79E-02	5.56E-02	1.58E-02	-1.04E+01	
 PENRE	MJ	6.13E+02	8.53E+00	3.50E-01	1.42E+00	3.25E-01	1.40E+00	-7.01E+01	
 PENRM	MJ	9.69E+00	0.00E+00	0.00E+00	0.00E+00	-9.01E+00	0.00E+00	0.00E+00	
 PENRT	MJ	6.23E+02	8.53E+00	3.50E-01	1.42E+00	-8.69E+00	1.40E+00	-7.01E+01	
 SM	kg	5.53E+00	0.00E+00	1.72E-04	0.00E+00	1.32E-05	3.34E-06	7.94E-02	
 RSF	MJ	9.64E-01	3.75E-03	4.66E-05	6.26E-04	1.19E-03	3.52E-04	2.43E-01	
 NRSF	MJ	3.75E+00	1.26E-02	6.86E-04	2.10E-03	1.22E-05	1.61E-03	6.90E+00	
 FW	m ³	6.38E-01	9.71E-04	1.80E-05	1.62E-04	2.03E-03	1.53E-03	-4.54E-02	

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

*Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

End of life - Waste






Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
 HWD	kg	4.56E-01	4.67E-04	1.03E-05	7.78E-05	1.15E-05	1.76E-03	-3.32E-02
 NHWD	kg	1.67E+01	7.41E-01	4.15E-04	1.24E-01	2.37E-02	9.37E+00	-3.10E+00
 RWD	kg	2.14E-03	5.82E-05	2.43E-06	9.71E-06	1.61E-07	8.16E-06	-3.54E-05

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed

*Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3}$ = 0,009"

*INA Indicator Not Assessed

End of life - Output flow

Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
 CRU	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
 MFR	kg	1.74E+00	0.00E+00	1.69E-04	0.00E+00	9.78E+00	3.20E-04	-3.11E-03
 MER	kg	2.33E-01	0.00E+00	5.24E-07	0.00E+00	6.64E-02	2.86E-06	-4.09E-04
 EEE	MJ	1.19E-01	0.00E+00	1.80E-06	0.00E+00	6.14E-02	4.13E-05	-1.00E-03
 EET	MJ	1.80E+00	0.00E+00	2.72E-05	0.00E+00	9.29E-01	6.25E-04	-1.52E-02

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported energy electrical; EET = Exported energy thermal

*Reading example: 9,0 E-03 = $9,0 \cdot 10^{-3}$ = 0,009"

*INA Indicator Not Assessed

Biogenic Carbon Content

Indicator	Unit	At the factory gate
Biogenic carbon content in product	kg C	0.00E+00
Biogenic carbon content in accompanying packaging	kg C	0.00E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO₂

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Source	Amount	Unit
Electricity, Vattenfall Nordic Hydropower (kWh) - SE - S-P-00088	S-P-00088	7,26	g CO ₂ -eq/kWh

Dangerous substances

The product contains no substances on the REACH Candidate list at or above 100 ppm, 0,01 % by weight.

Indoor environment

Fans are essential for indoor climate by influencing temperature perception and energy efficiency.

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products								
Indicator	Unit	A1-A3	A4	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	4.92E+01	5.26E-01	2.55E-02	8.76E-02	4.08E-01	6.71E-02	-1.09E+01

GWPIOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

Bibliography

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Graafland and Iversen (2022) EPD generator for NPCR 030 Ventilation components, Background information for EPD generator application and LCA data, LCA.no report number: 12.22

NPCR Part A: Construction products and services. Ver. 2.0. April 2021, EPD-Norge.

NPCR 030 Part B for Ventilation components, Ver. 1.0, 18.05.2021, EPD Norway.

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