

**Environmental  
Product  
Declaration**

According to ISO14025+EN15804+A2

This declaration is for:  
**Sikkens Interior/Exterior Lacquer Primers Waterbased**

Provided by:  
**AkzoNobel**



MRPI® registration:  
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## DETAILED PRODUCT DESCRIPTION

This EPD covers a high-quality waterborne trim primer for interior & exterior use from Sikkens. The waterborne trim primer for the European market is designed to meet variable requirements of professional painters concerning sealing, adhesion, coverage and environmental sustainability. This EPD is representing environmental impacts of an average waterborne trim primers from Sikkens based on production data.

### Typical Use:

Interior & Exterior Trim Primer

### Application:

Applied as trim paint by the following methods: brush, roller & spray.

### Packaging:

The paints are provided in these packaging sizes: 1L, 2.5L. The packaging weight of the representative product is 0.103 kg per kg of paint.

### Production process and conditions of delivery:

During paint production, the raw materials are pre-weighed according to the percentage of each in the formulation.

The pigment is then dispersed in a mixture of binder and solvent using a variety of machines.

The amount and type of dispersion is product specific and depends on the type of finish required.

Finally, tinter is added to correct the color, the paint is thinned to viscosity, filtered and filled into the appropriate packaging container.

All paint containers are transported from the production sites to a distribution center and finally to the customers.

Average paint characteristics	Sikkens Interior/Exterior Lacquer Primers Waterbased	Unit
Waterborne / Solventborne	Waterborne	
Weight per declared unit	0,125	kg/m <sup>2</sup>
Lifetime	20	years
Density	1,31	kg/L
Coverage	11	m <sup>2</sup> /L (for 1 layer)
Number of layers	1	#
VOC content	6,39	g/L paint

### Biogenic carbon:

Raw materials and paint packaging can contain biogenic carbon. Biogenic carbon is considered not relevant if the mass of biogenic carbon containing ingredients or packaging contribute less than 5% to the total mass. If the mass exceeds 5%, the biogenic carbon content at factory gate is listed in the table below.

Biogenic carbon content	kg C
Biogenic carbon content in product	0
Biogenic carbon content in accompanying packaging	0
Note: 1 kg biogenic carbon (kg C) is equivalent to 44/12 kg of CO <sub>2</sub> .	





Component (> 1%)	(kg / %)
Filler	Confidential
Solvent/Water	Confidential
Resin	Confidential
Pigment	Confidential

## SCOPE AND TYPE

The type of this EPD is Cradle-to-Gate with options. All major steps from the extraction of natural resources to the final disposal of the product are included in the environmental performance of the manufacturing phase, except those that are not relevant to the environmental performance of the product. This declaration does not imply an indicator result of zero.

This EPD is representative for products produced in Barcelona, Spain. The application market is for customers in Europe, where it is also expected to reach its end-of-life fate.

The software LCA for Experts 10.9.1.17 Professional is used to perform the LCA. The background databases used in the model are Ecoinvent 3.11 (published 20-11-2024) and CEPE LCI 2024 database (published June 2024), with method 'cut-off by classification'. The version of characterisation factors used is EF 3.1.

This study is a specific dataset EPD. The validity of this EPD is in correspondence with the specifications of the LCA project report.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARIES
Raw material supply	Transport	Manufacturing	Transport gate to site	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	X	ND	ND	ND	ND	ND	ND	ND	X	X	X	X	X

X = Modules Assessed

ND = Not Declared





## REPRESENTATIVENESS

This EPD is representative of the following product(s):  
Sikkens Rubbol BL Uniprimer

This EPD is based on product-specific data and represents this individual product as manufactured in Barcelona, Spain and as sold and used in the European market.

## ENVIRONMENTAL IMPACT per functional unit or declared unit (core indicators A2)

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-total	kg CO2 eq.	2,23E-01	7,71E-03	1,15E-01	3,45E-01	1,18E-02	1,15E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,91E-04	0,00E+00	1,68E-01	-2,44E-02
GWP-fossil	kg CO2 eq.	2,23E-01	7,70E-03	1,13E-01	3,44E-01	1,18E-02	1,10E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,91E-04	0,00E+00	1,68E-01	-2,42E-02
GWP-biogenic	kg CO2 eq.	-1,84E-03	4,71E-06	1,61E-03	-2,29E-04	7,19E-06	5,06E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,61E-07	0,00E+00	7,71E-06	-1,98E-04
GWP-luluc	kg CO2 eq.	1,20E-03	2,77E-06	9,71E-05	1,30E-03	4,22E-06	1,84E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,12E-07	0,00E+00	4,16E-07	-2,32E-05
ODP	kg CFC11 eq.	1,20E-08	1,68E-10	1,49E-09	1,37E-08	2,57E-10	1,75E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,29E-11	0,00E+00	2,85E-11	-5,36E-10
AP	mol H+ eq.	1,72E-03	2,55E-05	5,10E-04	2,26E-03	3,89E-05	6,90E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,95E-06	0,00E+00	1,43E-05	-7,18E-05
EP-fresh water	kg P eq.	6,42E-05	5,43E-07	3,86E-05	1,03E-04	8,30E-07	2,19E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,17E-08	0,00E+00	2,54E-07	-8,79E-06
EP-marine	kg N eq.	2,65E-04	8,71E-06	9,86E-05	3,73E-04	1,33E-05	2,73E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,68E-07	0,00E+00	6,62E-06	-1,57E-05
EP-terrestrial	mol N eq.	3,10E-03	9,42E-05	1,01E-03	4,20E-03	1,44E-04	2,58E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,22E-06	0,00E+00	7,24E-05	-1,54E-04
POCP	kg NMVOC eq.	8,53E-04	4,04E-05	3,97E-04	1,29E-03	6,17E-05	6,50E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,10E-06	0,00E+00	1,84E-05	-5,74E-05
ADP-minerals & metals	kg Sb eq.	2,86E-06	2,16E-08	2,88E-06	5,75E-06	3,30E-08	7,08E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,66E-09	0,00E+00	3,24E-09	-2,31E-08
ADP-fossil	MJ, net calorific value	4,17E+00	1,13E-01	1,38E+00	5,66E+00	1,73E-01	1,56E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,67E-03	0,00E+00	1,60E-02	-4,34E-01
WDP	m3 world Deprived	7,17E+00	6,74E-04	3,92E-02	7,21E+00	1,03E-03	-2,57E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,17E-05	0,00E+00	1,41E-03	-5,24E-03

- GWP-total = Global Warming Potential total
- GWP-fossil = Global Warming Potential fossil fuels
- GWP-biogenic = Global Warming Potential biogenictotal
- GWP-luluc = Global Warming Potential land use and land use change
- ODP = Depletion potential of the stratospheric ozone layer
- AP = Acidification Potential, Accumulated Exceedence
- 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 Exceedence
- POCP = Formation potential of tropospheric ozone photochemical oxidants
- ADP-minerals & metals = Abiotic Depletion Potential for non-fossil resources [1]
- ADP-fossil = Abiotic Depletion for fossil resources potential [1]
- WDP = Water (user) deprivation potential, deprivation-weighted water consumption [1]

### Disclaimer [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 experience with the indicator.

## ENVIRONMENTAL IMPACT per functional unit or declared unit (additional indicators A2)

Unit		A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PM	Disease incidence	1,51E-08	6,01E-10	6,42E-09	2,22E-08	9,18E-10	2,08E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,61E-11	0,00E+00	1,17E-10	-9,43E-10
IRP	kBq U235 eq.	2,25E-02	1,26E-04	7,38E-03	3,00E-02	1,93E-04	2,78E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,68E-06	0,00E+00	3,27E-05	-4,67E-03
ETP-fw	CTUe	2,72E+00	1,31E-02	8,74E-01	3,61E+00	2,00E-02	6,96E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,00E-03	0,00E+00	5,49E-02	-4,60E-02
HTP-c	CTUh	1,79E-10	1,34E-12	1,76E-09	1,95E-09	2,05E-12	1,46E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,03E-13	0,00E+00	2,14E-10	-1,31E-11
HTP-nc	CTUh	2,46E-09	6,15E-11	2,01E-09	4,54E-09	9,39E-11	1,08E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,72E-12	0,00E+00	6,35E-10	-8,38E-11
SQP	-	1,27E+00	1,13E-01	4,77E-01	1,86E+00	1,73E-01	2,23E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,69E-03	0,00E+00	5,34E-03	-4,53E-02

- PM = Potential incidence of disease due to PM emissions
- IRP = Potential Human exposure efficiency relative to U235 [1]
- ETP-fw = Potential Comparative Toxic Unit for ecosystems [2]
- HTP-c = Potential Comparative Toxic Unit for humans, cancer [2]
- HTP-nc = Potential Comparative Toxic Unit for humans, non-cancer [2]
- SQP = Potential soil quality index [2]

### Disclaimer [1]:

- 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.

### Disclaimer [2]:

- 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 experience with the indicator.

**OUTPUT FLOWS AND WASTE CATEGORIES per functional unit or declared unit (A1 en A2)**

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
HWD	kg	3,02E-03	1,16E-04	1,24E-02	1,55E-02	1,78E-04	1,67E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,92E-06	0,00E+00	2,34E-03	-3,24E-04
NHWD	kg	1,91E-01	1,09E-03	7,30E-02	2,65E-01	1,66E-03	3,29E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,32E-05	0,00E+00	1,43E-01	-5,21E-03
RWD	kg	1,50E-06	0,00E+00	0,00E+00	1,50E-06	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
CRU	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MFR	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	1,10E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
MER	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
EEE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,26E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	7,07E-02	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	9,05E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	1,51E-01	0,00E+00

- HWD = Hazardous Waste Disposed
- NHWD = Non Hazardous Waste Disposed
- RWD = Radioactive Waste Disposed
- CRU = Components for reuse
- MFR = Materials for recycling
- MER = Materials for energy recovery
- EEE = Exported Electrical Energy
- ETE = Exported Thermal Energy

**RESOURCE USE per functional unit or declared unit (A1 and A2)**

	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
PERE	MJ	3,94E-01	1,74E-03	3,55E-01	7,50E-01	2,66E-03	6,44E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,34E-04	0,00E+00	4,82E-04	-3,85E-02
PERM	MJ	1,36E-06	2,63E-10	1,01E-03	1,01E-03	4,02E-10	-7,39E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,02E-11	0,00E+00	9,07E-11	-1,59E-09
PERT	MJ	3,94E-01	1,74E-03	3,56E-01	7,51E-01	2,66E-03	5,70E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,34E-04	0,00E+00	4,82E-04	-3,85E-02
PENRE	MJ	4,17E+00	1,13E-01	1,37E+00	5,65E+00	1,73E-01	1,83E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,67E-03	0,00E+00	1,60E-02	-4,34E-01
PENRM	MJ	0,00E+00	0,00E+00	7,63E-03	7,63E-03	0,00E+00	-2,67E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	4,17E+00	1,13E-01	1,38E+00	5,66E+00	1,73E-01	1,56E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,67E-03	0,00E+00	1,60E-02	-4,34E-01
SM	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NSRF	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m3	2,54E-01	1,57E-05	9,13E-04	2,55E-01	2,40E-05	-5,99E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,20E-06	0,00E+00	3,28E-05	-1,22E-04

- PERE = Use of renewable primary energy excluding renewable primary energy 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 resources excluding non-renewable 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
- NSRF = Use of non-renewable secondary fuels
- FW = Use of net fresh water

## CALCULATION RULES

### Cut-off criteria:

Some cut-offs were applied to the study. During the manufacturing process, the input of consumables and disposed packaging from the raw materials is cut off from the system boundaries due to lack of data on the composition of waste, moreover secondary packaging materials such as wooden pallets and packaging for stabilisation of paint products during transport are excluded from the system boundaries. The production equipment and infrastructure is excluded from the system boundaries. Similarly, brushes, clothes, buckets etc. used during the application process are excluded from the assessment since they are considered capital goods. Also, the energy consumed during application, used for instance in spray applicators, has not been included due to its insignificance.

### Allocation procedure:

To allocate the emissions and inputs to the manufactured products, the decision-hierarchy in ISO 14044 is used (ISO 2006). It is not possible to sub-divide the site data into a more detailed level or find physical causalities between inputs and outputs, thus allocation is done based on mass, considering the annual production of paint products for each site. The production of paint comprises mostly the mixing of ingredients. Therefore, the environmental impact is expected to be related to the mass of the products.

### Data quality and data collection period:

Specific data was collected from AkzoNobel through a questionnaire, including inquiries about paint characteristics and packaging, production information. The data collection period for specific data was the year 2024. This primarily covers stages A1 and A3, where the geographical, technical and temporal representativeness was assessed to be "Very good".

Data gaps (i.e. transport data, end of life scenarios) were covered with data generic values for transport as described in the Product Environmental Footprint Category Rules - Decorative Paints document version 1.0 published by CEPE and reviewed in April 2018 and the Product Environmental Footprint method (European Commission, 2021). The geographical, technical and temporal representativeness for the applicable life-cycle stages where the generic values were used was assessed as "Good".

Generic data (i.e. upstream acquisition and production of raw materials, transport, waste treatment processes) was selected from Ecoinvent 3.11 database and CEPE 2024 database. In the case of missing data, a relevant proxy was searched and adjusted to the corresponding unit process.

Data quality was assessed following the criteria of the UN Environment Global Guidance on LCA database development, as presented in Annex Table E.1 in the EN15804+A2 standard.

### Power mix:

The electricity is modelled using a market-based approach. The renewable electricity is modelled according to the source(s) listed in the applicable GoOs for the manufacturing site(s). On-site electricity generation is modelled as such. In case (part of) the electricity consumption is not covered by GoOs or own electricity production, the residual mix for the relevant geography is taken (Ecoinvent 3.11). Electricity consumption in the manufacturing does not account for more than 30% of the total energy use in module A1-A3.

## SCENARIOS AND ADDITIONAL TECHNICAL INFORMATION

### A1. Raw materials supply

This module considers the extraction and processing of all raw materials and energy which occur upstream to the manufacturing process. The emissions and resource extractions derived from these processes are considered elementary exchanges between the product systems and the environment.

### A2. Transport of raw materials to manufacturer

This includes the transport distance of the raw materials to the manufacturing facility via road. As no primary data was available for the transportation distances, the default values from the PEFCR for Decorative Paints were used.

Transport of raw materials to manufacturing site	Distance	Unit
Raw materials - Lorry >32t	460	km
Packaging material - Lorry >32t	250	km

#### A3. Manufacturing

This module covers manufacturing and includes all processes linked to production such as mixing and packing. Use of electricity, fuels, waste and direct emissions associated to the production of the paint are accounted for.

Data regarding paint production was provided for the manufacturing site where the coatings are produced. Primary data and site-specific data was provided for the consumption of utilities and product packaging. For upstream (raw material processes) and downstream processes (application and waste processing) generic data is used when no specific data was available.

#### A4. Transport to Regional Distribution Centre (RDC) and the Point of Sale (PoS)

All paint containers are transported from the production facility into a distribution centre and then finally to the customer. As no primary data was available for the transportation distances, the default values from the PEFCR for Decorative Paints were used.

Transport of products to Point of Sale	Distance	Unit
Factory to Regional Distribution Centre - Lorry >32t	350	km
Regional Distribution Centre to Point of Sale - Lorry >32 t	370	km

#### A5. Application

This module includes the environmental aspects and impacts associated with the application of the paint. It is assumed that 11% of paint is lost during application (e.g., wet paint remaining in containers), in accordance with the PEFCR for Decorative Paints. This paint is disposed as dried paint waste, and is classified as non-hazardous waste. All VOC and biocide emissions related to the application process are included and are modelled as direct emissions to the environment.

#### C2. Transport to End-of-life scenario (incineration or landfill)

This module includes the transportation of the paint along with the substrates to the waste treatment facilities and end-of-life destination. As no primary data was available for the transportation distances, the default values from the PEFCR for Decorative Paints were used.

Transport of application waste and the distribution of the waste handling	Value	Unit
Application waste to EoL - Lorry >32t	80	km
Application waste EoL (Incineration with energy recovery)	45	%
Application waste EoL (Landfilling)	55	%

#### C3. Waste processing and C4. Disposal

The applied paint is disposed together with the substrate on which it has been applied at the end-of-life. The disposal excludes the water content of the paint, as the paint has dried during application. Biocide emissions are considered leached during end-of-life for interior wall paints. Based on the type of paint, an applicable waste scenario (100% incineration or landfill) is applied.

EoL scenario	Value	Unit
Interior or exterior wall paint (landfill)	100	%
Trim or specialties paint (incineration with energy recovery)	100	%



## DECLARATION OF SVHC

None of the raw materials are both listed on the "Candidate List of Substances of Very High Concern for authorisation" and present above the threshold (substance > 0.1 w%) stated by the European Chemicals Agency.

## REFERENCES

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EN 15804:2012+A2:2019 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products, of 11/2019.

European Commission, (2021). Annex II: Product Environmental Footprint Method. In Environmental Footprint Guidance Document. [Online] Available at: <[https://environment.ec.europa.eu/document/download/680503dc-5a19-4f6a-bb92-84d9bfc8f312\\_en?filename=Annexes%201%20to%202.pdf](https://environment.ec.europa.eu/document/download/680503dc-5a19-4f6a-bb92-84d9bfc8f312_en?filename=Annexes%201%20to%202.pdf)>

Eurostat, Packaging waste by waste management operations (env\_waspac), 2024. [Online] Available at: [https://ec.europa.eu/eurostat/cache/metadata/en/env\\_waspac\\_esms.htm#shortdata\\_descr](https://ec.europa.eu/eurostat/cache/metadata/en/env_waspac_esms.htm#shortdata_descr) Disseminated

ISO 14040:2006 Environmental management — Life cycle assessment — Principles and framework

ISO 14044:2006 Environmental management — Life cycle assessment — Requirements and guidelines

Product Environmental Footprint Category Rules (PEFCR) - Decorative Paints version 1.0, 2018. Developed by the Technical Secretariat Decorative Paints of the European Council of the Paint, Printing Ink and Artists' Colours Industry.

Product Environmental Footprint Category Rules (PEFCR) Guidance - version 6.3, 2017. Developed by the European Commission.

Sphera LCA for Experts Software System and Database for Life Cycle Engineering. Copyright 1992-2024 Sphera Solutions GmbH.

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## REMARKS

None

