

# REL-MR-110DC/21-21AU - Single relay



2961228

<https://www.phoenixcontact.com/pc/products/2961228>

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Plug-in miniature power relay, with multi-layer gold contact, 2 changeover contacts, input voltage 110 V DC

## Your advantages

- RT III-proof (wash-proof)

## Commercial data

Item number	2961228
Packing unit	10 pc
Minimum order quantity	10 pc
Sales key	08
Product key	DK6936
Catalog page	Page 290 (C-5-2019)
GTIN	4017918157982
Weight per piece (including packing)	16.2 g
Weight per piece (excluding packing)	14.97 g
Customs tariff number	85364900
Country of origin	AT

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## Technical data

### Product properties

Product type	Single relay
Operating mode	100% operating factor
Mechanical service life	3x 10 <sup>7</sup> cycles

### Insulation characteristics

Insulation	Basic insulation
Overvoltage category	III
Pollution degree	3

### Data management status

Date of last data management	02.05.2024
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### Electrical properties

Service life electrical	see diagram
Maximum power dissipation for nominal condition	0.45 W
Test voltage (Winding/contact)	5 kV AC (50 Hz, 1 min., winding/contact)
Test voltage (Contact/contact)	2.5 kV AC (50 Hz, 1 min., contact/contact)

### Input data

#### Coil side

Nominal input voltage U <sub>N</sub>	110 V DC
Input voltage range	71.5 V DC ... 272.8 V DC
Drive and function	monostable
Drive (polarity)	non-polarized
Typical input current at U <sub>N</sub>	4.1 mA
Typical response time	7 ms
Typical release time	3 ms
Coil resistance	26600 Ω ±15 % (at 20 °C)

### Output data

#### Switching

Contact switching type	2 changeover contacts
Type of switch contact	Single contact
Contact material	AgNi, hard gold-plated
Maximum switching voltage	30 V AC 36 V DC
Minimum switching voltage	100 mV (at 10 mA)
Limiting continuous current	50 mA
Maximum inrush current	50 mA
Min. switching current	1 mA (at 24 V)

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Interrupting rating (ohmic load) max.	1.2 W (at 24 V DC)
Switching: when the gold layer is destroyed	
Note	the following values are applicable if a gold layer is destroyed
Contact material	AgNi
Maximum switching voltage	250 V
Minimum switching voltage	5 V (at 10 mA)
Limiting continuous current	8 A
Maximum inrush current	50 A (20 ms)
Min. switching current	10 mA (At 5 V)
Interrupting rating (ohmic load) max.	190 W (at 24 V DC)
	85 W (at 48 V DC)
	60 W (at 60 V DC)
	44 W (at 110 V DC)
	60 W (at 220 V DC)
Switching capacity	2000 VA (for 250 V AC)
	2 A (at 24 V, DC13)
	0.2 A (at 110 V, DC13)
	0.2 A (at 250 V, DC13)
	2 A (at 24 V, AC15)
2 A (at 120 V, AC15)	
2 A (at 250 V, AC15)	

## Connection data

Connection method	Plug / solder connection
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## Dimensions

Dimensional drawing	
Width	12.7 mm
Height	29 mm
Depth	15.7 mm

## Material specifications

Color	white (RAL 9010)
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## Environmental and real-life conditions

### Ambient conditions

Degree of protection	RT III
Ambient temperature (operation)	-40 °C ... 85 °C

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Ambient temperature (storage/transport)	-40 °C ... 85 °C
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## Approvals

### Corrosive gas test

Identification	ISA-S71.04. G3 Harsh Group
	EN 60068-2-60

## Standards and regulations

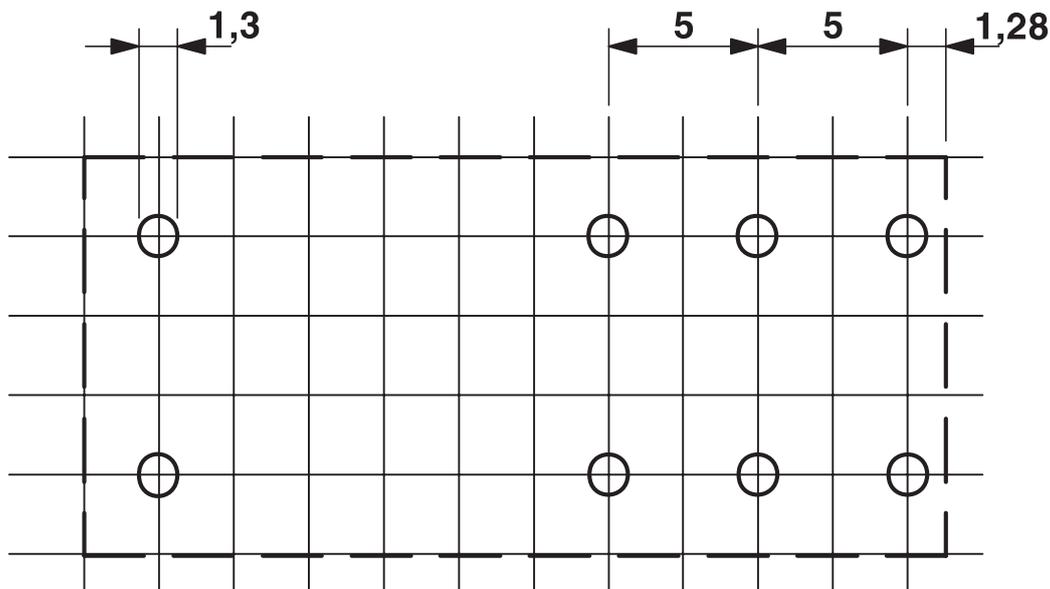
Standards/regulations	IEC 60664
	EN 50178
	EN 61810-1

## Mounting

Assembly note	Can be aligned without spacing ( $> 70 \text{ °C} \geq 2.5 \text{ mm}$ )
Mounting position	any

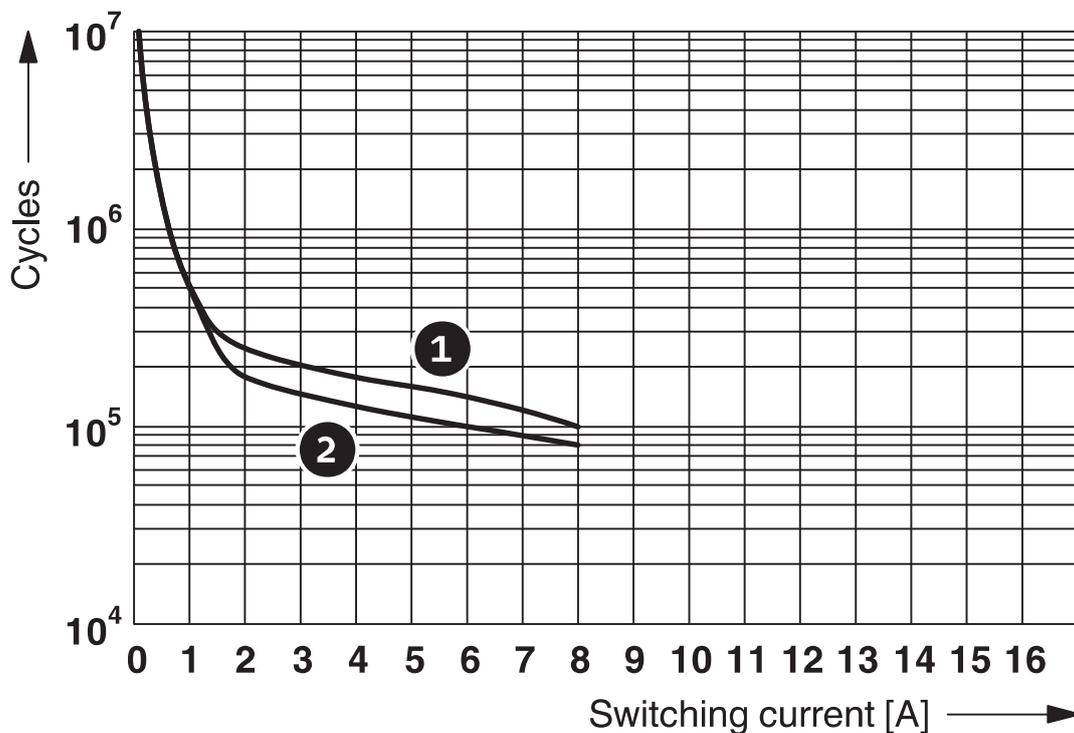
## Drawings

Drilling plan/solder pad geometry



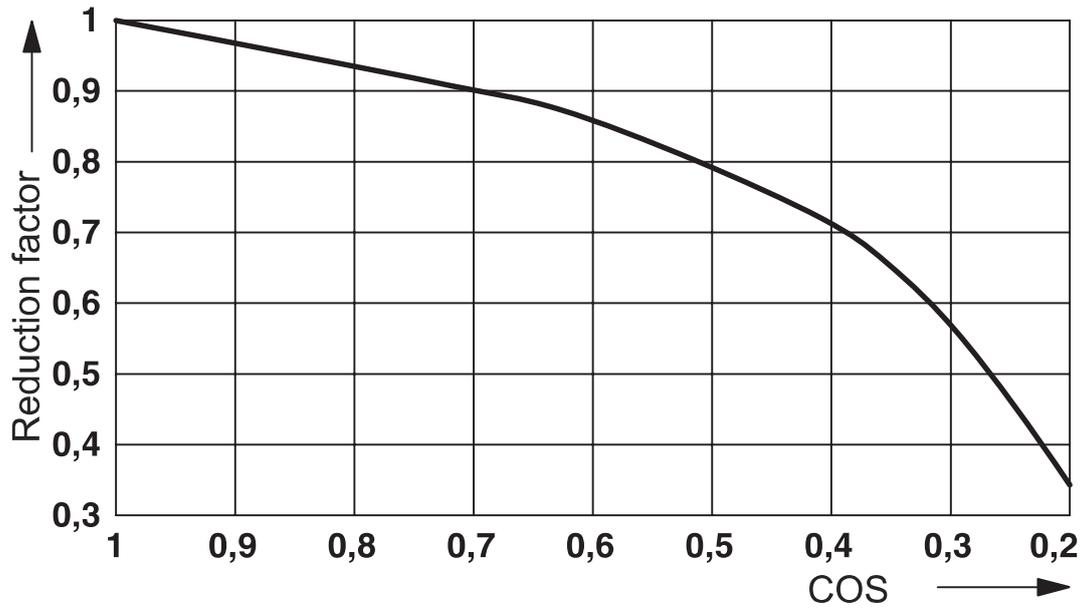
a = pitch division 2.5 mm

Diagram



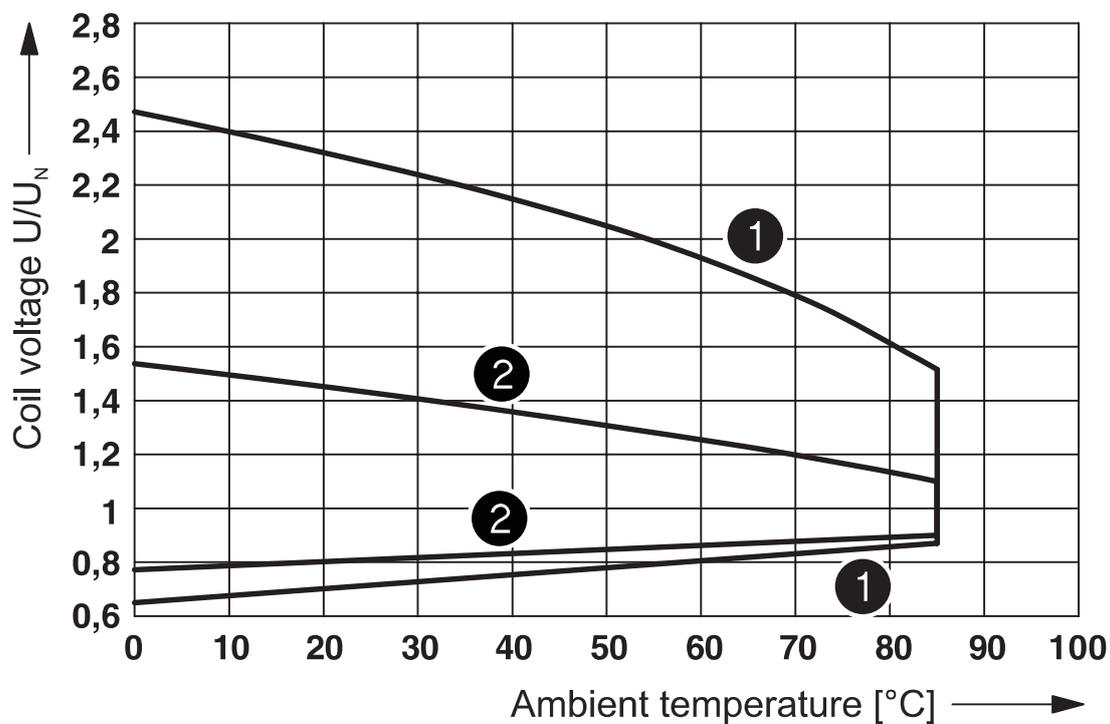
- ① 250 V AC, ohmic load (DC coils)
- ② 250 V AC, ohmic load (AC coils)

Diagram



Service life reduction factor with various cos phi

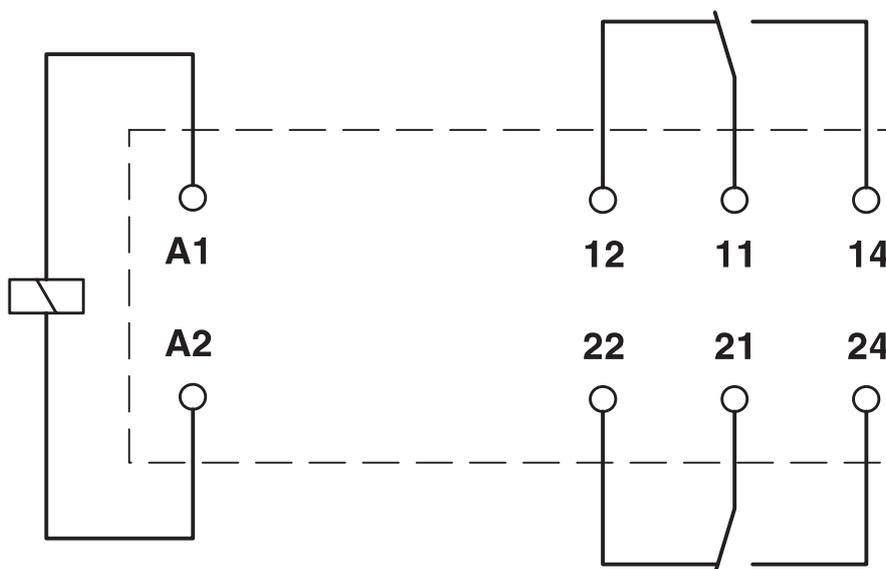
Diagram



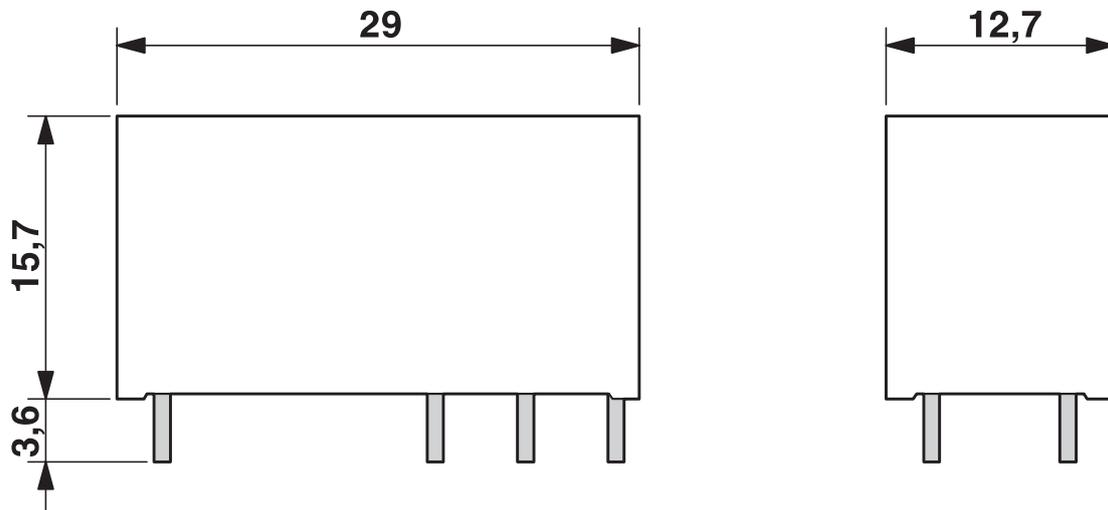
- ① DC coils
- ② AC coils

Operating voltage range

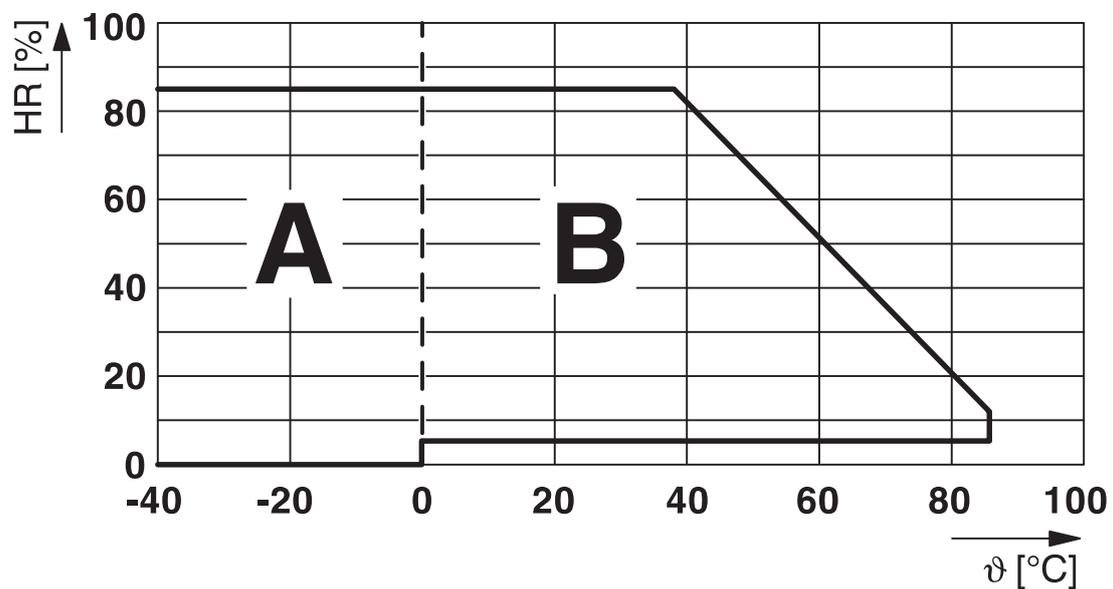
Circuit diagram



Dimensional drawing



Diagram



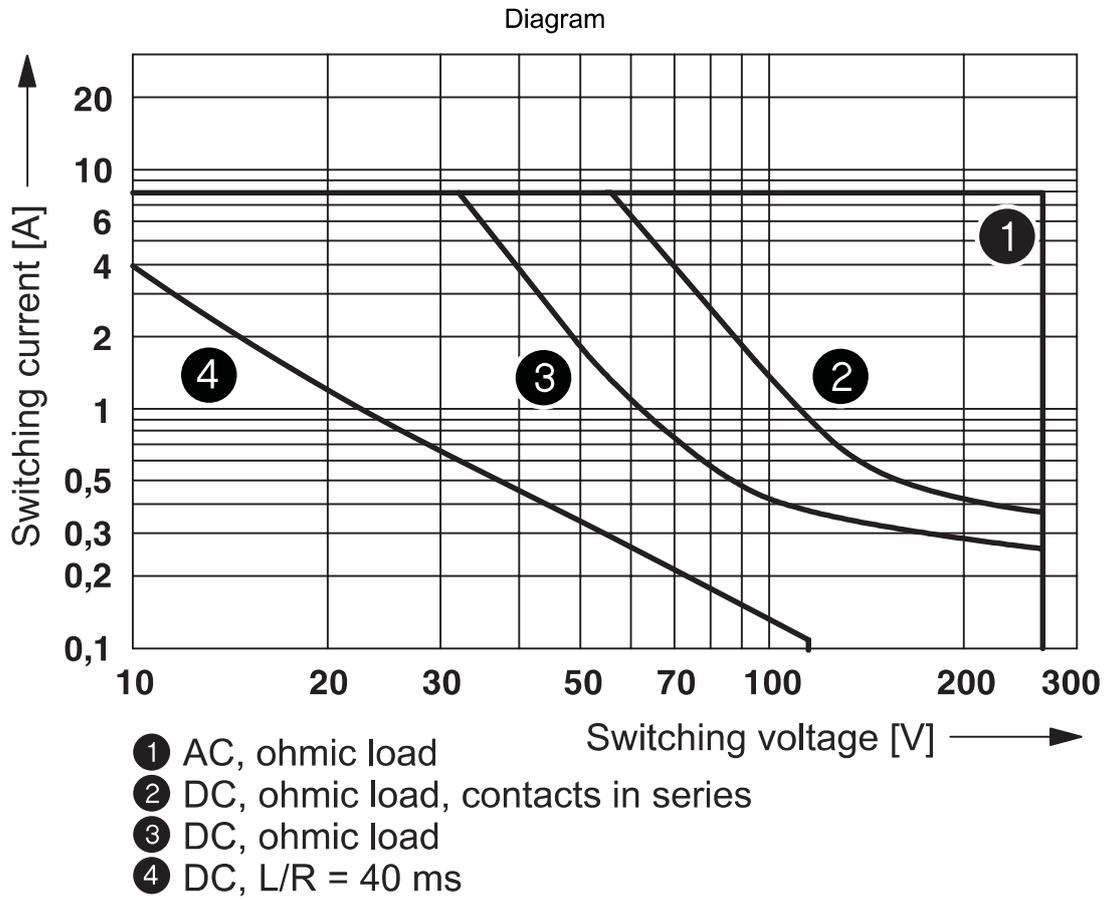
Permissible humidity for operation and storage.

The maximum permissible ambient temperature as specified in the data sheet must be observed.

Area A: Ice buildup at ambient temperatures  $\leq 0^\circ\text{C}$  must be prevented

Area B: Condensation at ambient temperatures  $> 0^\circ\text{C}$  must be prevented

On 30 full days that are naturally distributed across an entire year, a humidity level of 95% is permissible at an ambient temperature  $\leq 25^\circ\text{C}$ .



Interrupting rating

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/pc/products/2961228>



**cUL Recognized**  
Approval ID: FILE E 228652



**UL Recognized**  
Approval ID: FILE E 228652



**EAC**  
Approval ID: RU\*C-DE.\*08.B.00010



**UL Recognized**  
Approval ID: FILE E 228652



**VDE Zeichengenehmigung**  
Approval ID: 40007758



**cUL Recognized**  
Approval ID: FILE E 228652



**cULus Recognized**  
Approval ID: E172140

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## Classifications

### ECLASS

ECLASS-11.0	27371601
ECLASS-12.0	27371601
ECLASS-13.0	27371601

### ETIM

ETIM 9.0	EC001437
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### UNSPSC

UNSPSC 21.0	39122300
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes, No exemptions
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### China RoHS

Environment friendly use period (EFUP)	EFUP-E
	No hazardous substances above the limits

### EU REACH SVHC

REACH candidate substance (CAS No.)	No substance above 0.1 wt%
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