MESCOLI
CALDAIE DAL 1962

CONFORMITÀ AI REQUISITI
D.M. 16 FEBBRAIO 2016 (CONTO TERMICO 2.0) ED
ALLEGATO IV DEL DECRETO LEGISLATIVO 8 NOVEMBRE 2021, N. 199 PUBBLICATO IN GAZZETTA UFFICIALE IL 30 NOVEMBRE 2021.

La sottoscritta Società, rivenditrice in Italia dei collettori solari della ditta "**GASOKOL GmbH - Austria**" attesta che i seguenti modelli di collettori solari:

- **GEVOSOL 23**

Rispondono ai requisiti minimi richiesti per l'accesso all'incentivo riportati nelle Regole Applicative del D.M. 16/02/2016 al capitolo 5, paragrafo 10.2.
Rispondono inoltre ai requisiti riportati nell' Allegato IV del Decreto Legislativo 8 novembre 2021, n. 199 pubblicato in Gazzetta Ufficiale il 30 novembre 2021 per l'ottenimento alla detrazione di imposta e tutti gli incentivi previsti dalla Normativa.

Più precisamente:

- i collettori solari sono in possesso della certificazione Solar Keymark (vedere certificato in allegato n. **011-7S2846 F**);
- i collettori solari hanno valori di producibilità specifica, espressa in termini di energia solare annua prodotta per unità di superficie lorda A_G calcolata a partire dal dato contenuto nella certificazione Solar Keymark per una temperatura media di funzionamento di 50°C, **superiore a 300 kWh_t/m^2 anno, con riferimento alla località Würzburg** (vedere risultati test in allegato n. **011-7S2846 F** secondo EN ISO 9806).

  Valori di energia solare annua prodotta per singolo collettore riferita a Würzburg:

MODELLO COLLETTORE	SUPERFICIE LORDA A_G [m^2]	ENERGIA TERMICA ANNUA Q_{col} [kWh]	ENERGIA SOLARE ANNUA PER UNITÀ DI SUPERFICIE LORDA Q_U [kWh/m^2]
GEVOSOL 23	2,25	1.035	460

- I collettori solari, e le serie di bollitori e puffer sotto elencate hanno garanzia 5 anni solo in abbinamento a sistemi solari:
  - Bollitori per A.C.S. serie FIX, FAR, FAT, VAT e VSS;
  - Puffer serie GEA e PS;
  - Puffer combinati per A.C.S. serie TRIGENIO, TRIGENIO B e GAMMA.
- Accessori e componenti elettrici/elettronici sono garantiti 2 anni.

Vignola, lì 01 agosto 2023

MESCOLI CALDAIE SRL

Il Legale Rappresentante
Mescoli Dott. Ing. Gianni

MESCOLI CALDAIE S R L - 41058 Vignola (MO) ITALY - Via del Commercio, 285
Tel + 39 059 772733 - E-mail: info@mescolicaldaie.it - Web: www.mescolicaldaie.it
C.F. e P.IVA : 02147410365 - CCIAA 0268978 - Nr. Reg. Tribunale MO 37943 Cap. soc. € 100.000,00 i.v.

DIN CERTCO
Gesellschaft für Konformitätsbewertung mbH

CERTIFICATE

Certificate holder	**GASOKOL GmbH** **Solarpark 1** **4351 Saxen** **AUSTRIA**
Production facility	Saxen
Product	Solar collectors
Type, Model	gevoSol 23, gevoSol 26, gevoSol 49, gevoSol 120
Testing basis	DIN EN 12975-1:2011-01 DIN EN ISO 9806:2018-04 Solar KEYMARK Scheme Rules (2022-06)
Mark of conformity	
Registration No.	011-7S2846 F
Valid until	2028-07-31
Right of use	This certificate entitles the holder to use the mark of conformity shown above in conjunction with the specified registration number. See annex for further information.

DAkkS
Deutsche
Akkreditierungsstelle
D-ZE-11125-01-01

2023-08-09
Dr. Klaus Kock
Managing Director

GESELLSCHAFT FÜR KONFORMITÄTSBEWERTUNG MBH
DIN CERTCO

DIN CERTCO
Gesellschaft für Konformitätsbewertung mbH

ANNEX

Certificate	011-7S2846 F dated 2023-08-09
Technical Data	see data sheet, part of the test report of 2018-07-06
	Note(s):
	- The freeze resistance test according to DIN EN ISO 9806, clause 14 was not necessary. According to the manufacturer's declaration, the certified solar collectors may be used in frost exposed areas only in combination with appopriate frost protection mixtures or with appropriate frost protection controller.
	The customer specific collector series gevoSol comprises the standard modules with a gross aera between 2,3 and 14 m² as well as special construction forms and all intermediate sizes.
Testing laboratory/ Inspection body	TÜV Rheinland Energy GmbH Am Grauen Stein 1 51105 Köln GERMANY
Test report(s)	21242669.001, 21242669.002, 21242669.003 dated 2018-07-06

TÜVRheinland®
DIN CERTCO
Precisely Right.

Annex to Solar Keymark Certificate

Licence Number	**011-7S2846 F**
Date issued	**2023-08-04**
Issued by	**DINCERTCO**

Licence holder	**GASOKOL GmbH**	**Country**	Austria
Brand (optional)	-	**Web**	http://www.gasokol.at
Street, Number	Solarpark 1	**E-mail**	office@gasokol.at
Postcode, City	4351 Saxen	**Tel**	+43 7269 76600-0

Collector Type	Flat plate collector

Collector name	**Gross area (A_G)**	**Gross length**	**Gross width**	**Gross height**	**Power output per collector** Gb = 850 W/m2, Gd = 150 W/m2 & u = 1.3 m/s $\vartheta_m - \vartheta_a$					
					0 K	10 K	30 K	50 K	70 K	120 K
	m²	mm	mm	mm	W	W	W	W	W	W
gevoSol 23	2.25	2 100	1 070	105	1 595	1 522	1 357	1 166	950	300
gevoSol 26	2.58	2 100	1 230	105	1 829	1 745	1 556	1 337	1 089	344
gevoSol 49	4.83	2 080	2 320	105	3 425	3 267	2 912	2 503	2 039	644
gevoSol 120	12.00	2 080	5 770	105	8 508	8 117	7 235	6 218	5 067	1 601
Power output per m² gross area					709	676	603	518	422	133

Performance parameters test method	Quasi dynamic									
Performance parameters (related to A_G)	η0, b	a1	a2	a3	a4	a5	a6	a7	a8	Kd
Units	-	W/(m²K)	W/(m²K²)	J/(m³K)	-	J/(m²K)	s/m	W/(m²K⁴)	W/(m²K⁴)	-
Test results	0.716	3.12	0.014	0.000	0.00	6 600	0.000	0.00	0.0E+00	0.94

Incidence angle modifier test method		Quasi dynamic - outdoor								
Incidence angle modifier	Angle	10°	20°	30°	40°	50°	60°	70°	80°	90°
Transversal	$K_{\theta T,coll}$	1.00	0.99	0.98	0.96	0.93	0.88	0.77	0.39	0.00
Longitudinal	$K_{\theta L,coll}$	1.00	0.99	0.98	0.96	0.93	0.88	0.77	0.39	0.00

Heat transfer medium for testing	Water		
Flow rate for testing (per gross area, A_G)	dm/dt	0.043	kg/(sm²)
Maximum temperature difference during thermal performance test	$(\vartheta_m-\vartheta_a)_{max}$	90	K
Standard stagnation temperature (G = 1000 W/m²; ϑ_a = 30 °C)	ϑ_{stg}	200	°C
Maximum operating temperature	$\vartheta_{max\ op}$	200	°C
Maximum operating pressure	$p_{max,op}$	1000	kPa

Testing laboratory	TÜV Rheinland Solar GmbH	http://www.tuv.com/solar	
Test report(s)	21242669.01	**Dated**	06.07.2018
	21242669.02		06.07.2018
	21242669.03		06.07.2018

Comments of testing laboratory Ver. 6.2 (13.01.2022)

Die Kundenspezifisch gefertigte Kollektorserie gevoSol beinhaltet die Standardmodule mit einer Bruttofläche von 2,3 bis 14 m² sowie auch Sonderbauformen, sämtliche Zwischengrößen und Sonderabmessungen. The customer specific collector series gevoSol comprises the standard modules with a gross aera between 2,3 and 14 m² as well as special construction forms and all intermediate sizes. All tests were performed under the latest edition EN ISO 9806:2017.

TÜVRheinland® Genau. Richtig. ab
TÜV Rheinland Solar GmbH
Am Grauen Stein
51105 Köln

DIN CERTCO ● Alboinstraße 56 ● 12103 Berlin, Germany
Tel: +49 30 7562-1131 ● Fax: +49 30 7562-1141 ● E-Mail: info@dincertco.de ● www.dincertco.de

TÜVRheinland®
DIN CERTCO
Precisely Right.

Annex to Solar Keymark Certificate	Licence Number	011-7S2846 F
Supplementary Information	Issued	2023-08-04

Gross Thermal Yield in kWh/collector at mean fluid temperature ϑ_m

Standard Locations		Athens			Davos			Stockholm			Würzburg		
Collector name	ϑ_m	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C	25°C	50°C	75°C
gevoSol 23		2 561	1 854	1 219	1 961	1 365	856	1 442	954	578	1 571	1 035	616
gevoSol 26		2 937	2 126	1 398	2 248	1 565	981	1 654	1 094	662	1 801	1 186	706
gevoSol 49		5 498	3 980	2 618	4 209	2 930	1 837	3 096	2 049	1 240	3 371	2 221	1 322
gevoSol 120		13 659	9 887	6 503	10 457	7 280	4 564	7 693	5 091	3 081	8 376	5 518	3 284
Gross Thermal Yield per m² gross area		1 138	824	542	871	607	380	641	424	257	698	460	274
Annual efficiency, η_a		64%	47%	31%	53%	37%	23%	55%	36%	22%	56%	37%	22%
Fixed or tracking collector		Fixed (slope = latitude - 15°; rounded to nearest 5°)											
Annual irradiation on collector plane		1765 kWh/m²			1630 kWh/m²			1166 kWh/m²			1244 kWh/m²		
Mean annual ambient air temperature		18.5°C			3.2°C			7.5°C			9.0°C		
Collector orientation or tracking mode		South, 25°			South, 30°			South, 45°			South, 35°		

The collector is operated at constant temperature ϑm (mean of in- and outlet temperatures). The calculation of the annual collector performance is performed with the official Solar Keymark spreadsheet tool Scenocalc Ver. 6.2 (13.01.2022). A detailed description of the calculations is available at http://www.estif.org/solarkeymarknew/

Additional Information

Collector heat transfer medium				Water-Glycole	
The collector is deemed to be suitable for roof integration				Yes	
The collector was tested successfully under the following conditions:					
Climate class (A+, A, B or C)				A	--
G (W/m²) >	1000	ϑ_a (°C) >	20	H_x (MJ/m²) >	600
Maximum tested positive load				5400	Pa
Maximum tested negative load				1000	Pa
Hail resistance using ice balls (diameter)				35	mm

Additional collector attribute(s)

Using external power source(s) for normal operation	No	Active or passive measure(s) for self-protection	No
Co-generating thermal and electrical power	No	Façade collector(s)	No

Energy Labelling Information

	Reference Area, A_{sol} (m²)
gevoSol 23	2.25
gevoSol 26	2.58
gevoSol 49	4.83
gevoSol 120	12.00

Additional Informative Technical Data

Hydraulic Designation Code	Aperture Area, A_a (m²)
9-VH-12S-A:7.3,1930-C:20.8,2010	2.01
10-VH-12S-A:7.3,1930-C:20.8,2170	2.33
10,10-VH-12S-A:7.3,1930-	4.40
10,10,10,10,10-13S-A:7.3,1930-C:20.8,1200	11.00

Data required for CDR (EU) No 811/2013 - Reference Area A_{sol}

Collector efficiency (η_{col})	56%

Remark: Collector efficiency (ηcol) is defined in CDR (EU) No 811/2013 as collector efficiency of the solar collector at a temperature difference between the solar collector and the surrounding air of 40 K and a global solar irradiance of 1000 W/m², expressed in % and rounded to the nearest integer. Deviating from the regulation ηcol is based on reference area (Asol) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806:2017.

Data required for CDR (EU) No 812/2013 - Reference Area A_{sol}

Zero-loss efficiency (η_0)	0.71	--
First-order coefficient (a_1)	3.12	W/(m²K)
Second-order coefficient (a_2)	0.014	W/(m²K²)
Incidence angle modifier IAM (50°)	0.92	--

Remark: The data given in this section are related to collector reference area (A_{sol}) which is aperture area for values according to EN 12975-2 or gross area for ISO 9806. Consistent data sets for either aperture or gross area can be used in calculations like in the regulation 811 and 812 and simulation programs.