

## DIABON® quenchers

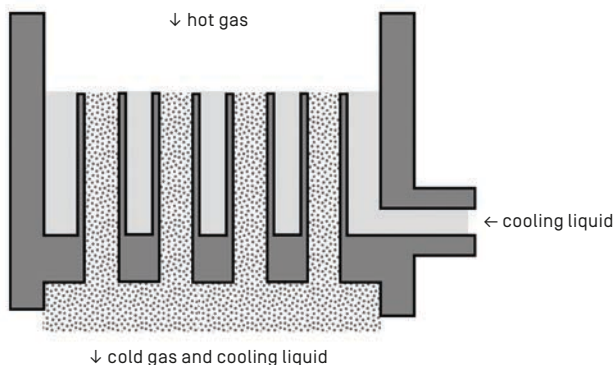
Quenchers are widely used in the chemical, pharmaceutical and environmental industries to rapidly cool down incineration, process or flue gases, or to dissolve gases rapidly by inducing a cooling agent.

SGL Carbon's DIABON quenchers are an excellent choice with respect to operational lifetime and efficiency for the treatment of gases in an aggressive chemical environment [e.g. containing substances which can form sulfuric acid, hydrochloric acid, hydrofluoric acid, or hydrogen bromide]. They can be used in large volume processes at gas temperatures up to 1600 °C. The DIABON graphite based design with no moving parts is extremely robust and insensitive to thermal shock or deformation. Operation of the quencher is minimally impaired by dust particles and excellent production efficiencies can be achieved.

In addition, if you operate not DIABON based quenchers [e.g. from stainless steel], we can provide materials and designs to improve the heat and corrosion resistance of your units.

### Products

**DIABON pipe quencher:** In this design, liquid and gas flow co-current through pipes at high velocities. Turbulences created ensure intensive direct contact and thus high heat transfer rates. Turbulence and large pipe diameters reduce the risk of plugging.

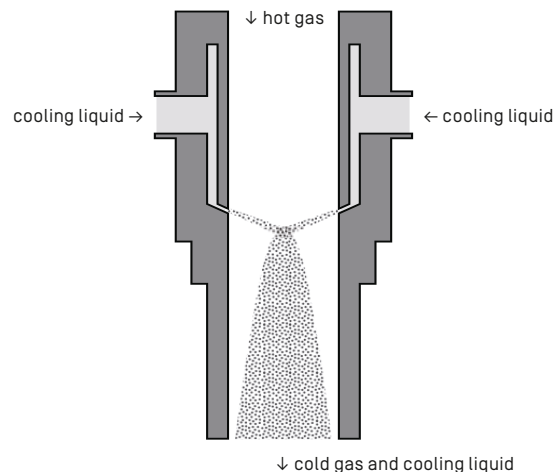


↑ DIABON pipe quencher



↑ DIABON quencher DN2700 with selected pipes installed

**DIABON empty pipe quencher:** In this design, the cooling liquid is forming a conical water curtain inside this pipe through which hot flue gases are passing. DIABON empty pipe quenchers are designed to eliminate the risk of fouling [with particles up to 2 mm]. They excel when low pressure drops are desired or capacity fluctuations occur.



↑ DIABON empty pipe quencher

## Options

- **CARBOGUARD®:** For graphite parts SGL Carbon has developed a carbon fiber wrapping to enhance the mechanical stability, serving as safeguard in case of process-related material degradation.
- **Corrosion and temperature protection for quenchers:** SGL Carbon has a large portfolio of material competence regarding high temperature and corrosive applications. From the selection of impervious DIABON graphite, non-impregnated graphite and carbon, CFRC and CFRP carbon fiber composites, steel, and PTFE and in combination with our process and design engineering competence we can provide the best solution for your individual task. Possible applications are heat shielding, corrosion protection in high corrosive regions, gas inlet cylinders, etc.

## Customer benefits

- **Long lifetime:** superior corrosion resistance by full range of graphite and impregnation qualities available (ultra-fine and fine-grain graphite, PTFE or phenolic resin impregnation, etc.)
- **High performance:** hot gases are cooled almost instantaneously even at high flow rates, minimizing the risk of dioxin, furan or other toxic re-synthesis
- **Low maintenance costs:** design based on static parts
- **Proven designs:** many quenchers in operation worldwide [references available on request]
- **Service excellence:** fast and competent services for repair and spare parts

## Data of DIABON® quenchers

Typical properties	Units	Pipe quencher [low temperature]	Pipe quencher [high temperature]	Empty pipe quencher
Maximum temperature	°C	200	1600	1600
Diameter min.	mm	250	250	240
Diameter max.*	mm	2700	2100	1200
Gas volume stream min.	Nm <sup>3</sup> /h	1200	800	800
Gas volume stream max.*	Nm <sup>3</sup> /h	130000	53000	30000
Specific advantages		Low volumes in quench media recirculation required, pipe design can be adapted for pressure drop reduction	Low volumes in quench media recirculation required, pipe design can be adapted for pressure drop reduction	No fouling or plugging, very low pressure drop, simple, compact and maintenance free design
Other options		CARBOGUARD, structural and static analysis	CARBOGUARD, structural and static analysis	CARBOGUARD, turbulence increase by design modifications (e. g. mixing core)
Standard connections		DIN/ANSI	DIN/ANSI	DIN/ANSI
Available pressure codes		PED 2014/68/EU, ASME	PED 2014/68/EU, ASME	PED 2014/68/EU, ASME

\* Special designs, exceeding the typical data above are possible but must be assessed individually. Do not hesitate to contact us for any special request.

SGL Carbon has a broad portfolio in chemical process equipment and process design. Besides quencher equipment we can support you with solutions for the complete quenching process or equipment for down-stream processes like falling-film gas absorption etc.

By the way: DIABON phenolic resin impregnated graphite is certified by FDA (Food and Drug Administration)



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### TIS quenchers.00

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