



*For fast binder removal of all kind of injection moulded components, partially containing binders of short non-polar hydrocarbon chains*

## Supercritical Carbon Dioxide Extractor

### Equipment features

Some features of the supercritical extraction equipment are a re-circulating CO<sub>2</sub> fluid system, resulting in very low CO<sub>2</sub> consumption and a separator continuously separating the binder from the CO<sub>2</sub> during extraction. The following example shows the efficiency of the system:

the 20 litre extractor can each time be set with 650 pieces of injection moulded watchcases. One complete extraction cycle takes only five to six hours, by which 90-95% of the binder is removed. The output of the 20 litre chamber unit is thus more than sufficient for large-scale production.

Equally important, we have rationalised the unit design to be able to offer equipment at an attractive price. As a result, the investment cost in terms of output is comparable to thermal debinding systems.

### Advantages of supercritical extraction

- Considerably reduced debinding time
- Dispensable powder embedment
- Excellent shape stability - no shrinkage and no swelling
- High dimensional tolerances (no re-arrangement of particles)
- Improved surface finish
- Possible to extract thick-walled products
- No reaction between CO<sub>2</sub> and powder - CO<sub>2</sub> is thermodynamically stable
- Extracted paraffin can be recycled
- No additional CO<sub>2</sub> to the atmosphere



## Technical Data

## GC-SCE

Effective chamber volume	20 litres, 50 litres
Supercritical fluid	CO <sub>2</sub>
Pressure	- 300 bar
Temperature	- 90°C
Flow rate	1 kg CO <sub>2</sub> /min (20 l), 2 kg CO <sub>2</sub> /min (50 l)
Load	50 kg ( 20 l), 100 kg (50 l)
Extraction rate	0.2 kg binder/h (20 l), 0.4 kg binder/h (50 l)

### General

Dimensions (wxdxh)	80x110x170 cm <sup>3</sup> (20 l), 90x120x180cm <sup>3</sup> (50 l)
Weight, approx.	350 kg (20 l), 450 kg (50 l)
Mains connection	230 VAC, 50 Hz, 1-ph, 1.5 kW (20 l) 2.2 kW (50 l)

*Specifications subject to change*

### CE-mark

The GC supercritical carbon dioxide extractors conform to the regulation stipulated by the European Community for CE-marking.

### About GOCERAM

GOCERAM has long experience of net shape forming of ceramic and metal powder based components, especially utilising injection moulding. GOCERAM supplies complete production lines for injection moulding, including roll mills, drying ovens, mixers\*, medium pressure injection moulding machines\*, automatic mould tools\*, debinding furnaces\*, with or without weight-loss rate control, and special sintering furnaces\*. In addition, a know-how package is offered for rapid start up of the production.

\*Equipment designed and manufactured by GOCERAM

GOCERAM also carries out test runs of a specific material and mould according to the client's wishes, on contract basis. Another service is prototype development and test production of a variety of components.

Please contact GOCERAM or its representatives for further information.

The picture shows a selection of ceramic, metal and tungsten carbide components manufactured by the GOCERAM route.



### North American operation unit:

GOCERAM, Inc  
181 West 1700 South  
Salt Lake City, UT 84115, USA  
Phone +1 (801) 483-3100  
Fax +1 (801) 483-3101

### Representatives:

HARROP Industries, Inc.  
3470 East Fifth Avenue  
Columbus, Ohio 43219-1797  
USA  
Tel +1 (614) 231-3621  
Fax +1 (614) 235-3699

VIRAMBE SCIENTIFIC  
C-201, Himchhaya Society  
Savarkar Road  
Dombivli (East) 421 201  
INDIA  
Tel 0251 2423877  
Cell phone 09819 241145

Materials Processing, Inc.  
6401 Elm Crest Court  
Fort Worth, TX 76132  
USA  
Tel +1 (817) 294-0135  
Fax +1 (817) 294-8607

Altech Co., Ltd.  
YM Shinjuku Bldg, 4-1 Yotsuya  
4-Chome, Shinjuku-ku,  
160-0004 Tokyo  
JAPAN  
Tel +81-3-5363-3003  
Fax +81-3-5363-0943

Goceram AB	Phone	+46 (0)31-18 11 03
Svealiden 8	Fax	+46 (0)31-18 11 03
SE-431 39 Mölndal	Email	contact@goceram.com
Sweden	Site	www.goceram.com