

Contact person RISE  
Fredrik Wångsell  
Chemistry and Materials  
+46 10 516 65 54  
fredrik.wangsell@ri.se

Date  
2020-10-19

Reference  
O100152

Page  
1 (2)

JAWPEER AB  
Peer Nordbäck  
Björkhagsvägen 75  
186 35 Vallentuna

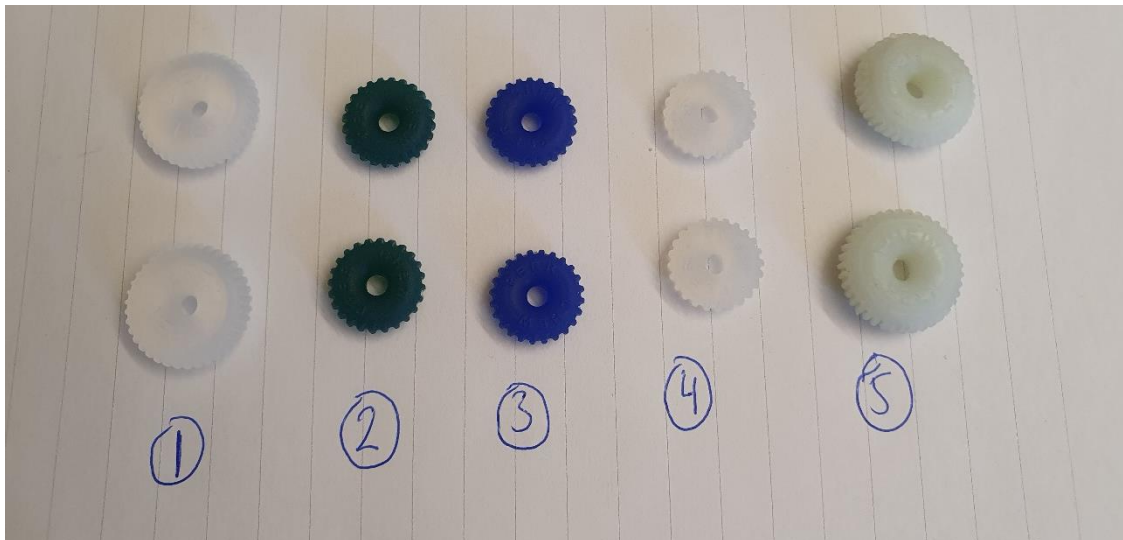
## Determination of cyclic siloxane content in silicone samples

### Assignment

To determine cyclic (D3-D6) siloxanes in silicone samples.

### Sample

Sample identification: Five samples, see figure 1  
Arrived at RISE: 2020-08-18  
Date of experiment and analysis: 2020-08-25 to 2020-08-27



**Figure 1.** Pictures of the samples, Sample 1 (transparent, large), 2 (green, small), 3 (blue, small), 4 (transparent, small) 5, (off-white, large).

### RISE Research Institutes of Sweden AB

Postal address	Office location	Phone / Fax / E-mail
Box 857	Brinellgatan 4	+46 10 516 50 00
SE-501 15 BORÅS	SE-504 62 BORÅS	+46 33 13 55 02
Sweden		info@ri.se

This document may not be reproduced other than in full, except with the prior written approval of RISE.

## Method

The concentrations of cyclic siloxanes was determined by method QUANTIFICATION OF RESIDUAL AMOUNTS OF CYCLIC VOLATILE METHYL SILOXANES IN SILICONE ELASTOMERS described by CES – Silicones Europe, revised version January 2019. Duplicate samples of the silicone materials were weighed (0,1 to 0.2 g) and extracted by a solution of internal standards in dichloromethane for 30 min in a ultrasonic-bath, followed by GC-MS analysis. The concentrations of cyclic siloxanes D3 (Hexamethylcyclotrisiloxane, CAS 541-05-9), D4 (Octamethylcyclotetrasiloxane, CAS 556-67-2), D5 (Decamethylcyclopentasiloxane, CAS 541-02-6) and D6 (Dodecamethylcyclohexasiloxane, CAS 540-97-6) were determined using external standards of concentrations from 2.5 µg/ml to 200 µg/ml. Octane, nonane and decane were used as internal standards.

## Result

The results of the determination of cyclic siloxanes are given as mg/kg in Table 1.

Table 1.

Sample	D3	D4	D5	D6
1	<LOQ	<LOQ	<LOQ	<LOQ
2	<LOQ	<LOQ	<LOQ	<LOQ
3	<LOQ	<LOQ	<LOQ	<LOQ
4	<LOQ	<LOQ	<LOQ	<LOQ
5	<LOQ	<LOQ	<LOQ	<LOQ

LOQ (Limit of quantification) = 0,1 mg/kg

RISE Research Institutes of Sweden AB  
**Chemistry and Materials - Chemistry**

Performed by

Examined by

Fredrik Wångsell

Marcus Gjertz