

# Material Safety Data Sheet: (RL 91/155/EWG)

Date: 11/07/2008

## 1. Substance and Manufacturer Identification:

**Trade Name:** **Flucarb 56**  
**Material Type:** Perfluorohydrocarbone

**Company:** The Swatch Group R&D Ltd.  
Division Moebius  
Hegenheimerstrasse 23  
CH-4123 Allschwil 2  
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## 2. Composition:

**Substance:**  **Composition:**   
**CAS-Nr.:** 355-42-0  
**Chemical Characteristics:** Perfluorohexane  
**Chemical Formula:** C<sub>6</sub> F<sub>14</sub>  
**Structure Formula:** CF<sub>3</sub>[CF<sub>2</sub>]<sub>4</sub>CF<sub>3</sub>

## 3. Possible Hazards:

The product, when properly handled and stored, according to the good working and hygienic practices, is not dangerous for the human health and nature.  
Attention: When heated up over 200 °C dangerous vapours may occur.

## 4. First Aid Measures:

**Inhalation:** Move to fresh air  
**Skin contact:** Wash off with soap and water  
**Eye contact:** Rinse out with water. Obtain medical attention if adverse symptoms arise.  
**Ingestion:** Drink water. Affected persons are to be calmed down and consult a physician at once.

## 5. Fire Fighting Measures:

The fire fighting measures should be conform to the materials in the nearby surrounding.

**Suitable extinguishers:** none product is not inflammable  
**Unsuitable extinguishers:** none  
**Special hazards:** none (see point 10)  
**Special protective equipment:** For firemen positive pressure self-contained breathing apparatus.  
Hydrofluoric acid and Perfluoroisobutylene may occur through the thermal decomposition  
**Further information:** Cool barrels with water

**Product: Flucarb 56****6. Accidental Release Measures:**

<b>Personel Protection:</b>	Avoid skin and eye contact. Avoid inhalation of the vapours
<b>Environmental Precautions:</b>	If larger amount is spilt (> 10 liters) in closed room wear breathing protection
<b>Cleaning Measures:</b>	Larger amounts to be collected in a container and disposed in a manner prescribed in Federal, State and Local regulations
<b>Further Information:</b>	Keep away from ignition sources. Avoid contact with hot surfaces

**7. Handling and Storage:**

<b>Handling:</b>	Do not smoke when using the product.
<b>Storage:</b>	Store in original closed container at 16 - 22 °C
<b>Further Information:</b>	Store barrels in a collecting basin

**8. Exposure Controls / Personal Protection:**

<b>Technical Protection:</b>	When properly handled no special measures necessary
<b>Exposure Limit:</b>	
<b>MAK-Value:</b>	not fixed
<b>BAT-Value:</b>	not fixed
<b>TRK-Value:</b>	not fixed
<b>Personel Protective Equipment:</b>	
<b>Breathing protections:</b>	not necessary, do not breath in the vapours
<b>Skin protection:</b>	Wear rubber gloves when in direct contact with the product
<b>Eye protections:</b>	not necessary, if danger of splash is likely wear protection glasses
<b>Body protection:</b>	not necessary
<b>Further information:</b>	please follow the usual hygienic measures

**9. Physical and Chemical Properties:**

<b>Appearance:</b> liquid	<b>Colour:</b> colourless	<b>Odour:</b> practically odourless
		<b>Tested after:</b>
<b>Boiling point:</b>	56 °C	DIN 51 751
<b>Pour point:</b>	- 90 °C	ISO 3016
<b>Flash point:</b>	not inflammable	DIN 51 755
<b>Fire point:</b>	---	DIN 51 794
<b>Explosion limit:</b>		
<b>lower</b>	NA	
<b>upper</b>	NA	
<b>Vapor pressure (20 °C):</b>	310 mbar	
<b>Density (20 °C):</b>	1.68 g/cm <sup>3</sup>	DIN 51 757
<b>Solubility 20 °C (in H<sub>2</sub>O):</b>	0.001 %	
<b>pH-value:</b>	NA	
<b>Viscosity (20 °C):</b>	~ 0.42 mm <sup>2</sup> /s	DIN 51 562

**Product: Flucarb 56****10. Stability and Reactivity:****Thermal Decomposition:****Conditions to avoid:****Substances to avoid:**

Heating up over 200 °C. High temperatures, naked flames  
Reactions with fine crushed reactive metals (alkaline and  
earthalkaline-metals) are possible. Dangerous  
polymerisation does not occur.

**Dangerous Decomposition products:**

CO, HF, Perfluoroisobutylene

**Dangerous Reactions:**

Stable. Dangerous polymerisation does not occur.

**11. Toxicological Information:****Acute Oral Toxicity (LD 50):**

> 5'000 mg/kg (rat)

**Primary Skin irritation:**

From skin contact no disadvantageous health dangers are to  
be expected.

After usage the product might be polluted which could cause  
skin irritation. Symptoms can include reddening, itching and  
swelling.

**Skin sensitivity:**

Not known.

**Primary Eye irritation:**

There are no harmful effects expected after an eye contact.  
A significant eye irritation due to the product is not expected.

After usage the product might be polluted which could cause  
eye irritation: Symptoms may include reddening, swelling,  
pain and flood of tears.

**Acute inhalation:**

There are no negative health consequences to be expected  
due to inhalation. Health consequences due to inhalation  
are expected only if the product is heated up to its  
decomposition temperature (200 °C).

**Swallowing:**

An exposition due to swallowing is unlikely as a way of  
ingestion. From a swallowing by mistake no negative  
consequences are expected. At usage pollution of the  
product may occur which could be poisonous when  
swallowed.

**12. Ecological Information:****Acute Fishtoxicity:**

LC50: 96 h (pimephales promelas): > 1000 mg/l

**Bioaccumulation:**

Not to be expected

**Biological Decomposition:**

Not decomposable

**Water hazard class:**

1, poor danger for water (self estimation)

**Product: Flucarb 56****13. Disposal Considerations:**

<i>Product:</i>	Dispose off in a manner prescribed in Federal, State and Local regulations eventually take into consideration 'pollution due to usage'.
<i>Packing:</i>	Can be disposed like household products
<i>Wastedisposalcode:</i>	55223 - other halogenated organic solvents without chlorine

**14. Transport Information:**

<i>UN-Nr.:</i>	-----
<i>RID / ADR:</i>	not classified
<i>GGVSee / IMDG-Code:</i>	not classified
<i>ICAO / IATA-DGR:</i>	not classified
<i>More Information:</i>	This product is not dangerous.

**15. Regulatory Information:**

<i>Classification after European guidelines:</i>	No dangerous goods
<i>Hazard Symbol:</i>	Not required
<i>Risk phrases:</i>	None
<i>Safety phrases:</i>	S 2: Keep away from children S 21: Do not smoke when working with the product S 51: Use only in good 'ventilated' areas.

**16. Other Informations:**

The recommendations given in this material safety data sheet are put together from actual tests (if available), comparisons with similar products as well as information on different products or components bought from other manufacturers.

The information given here refers only to the mentioned product. These information are not accurate, if the product is being used together with other materials or in a working process. This report corresponds to our knowledge and experience at the given date. However, we do not give any warranty for faultlessness, reliability and completeness.