

**Material Safety Data Sheet**

**QUIL-A Saponin lyophilized powder**

Edition number 3  
February 2009

**Status** Active

**1. Identification of the substance and the supplier**

**Trade name** Quil-A, purified saponin

**Formula** Triterpenoid saponin based on quillaic acid with glycosidic linkages to carbohydrate molecules.

**Supplier** Brenntag Biosector,  
Elsenbakken 23  
DK- 3600 Frederikssund  
Phone: (+45) 47 38 47 00

## 2. Information on the contents

Contents	Acceptable range
Quillaja saponin, purified. EINECS-nr. 232-462-6  (White-ebony coloured crystal-like powder)  <b>CAS No. 8047-15-2</b>	
Dry matter	Min. 95 %
HPLC	Chromatogramme enclosed
Thin-layer chromatography	Chromatogramme enclosed
Hemolytic activity	Complies with test.

## 3. Danger identification

**People**                      Irritant

## 4. First aid precautions

### Inhalation

**First aid:**                      Remove person from exposure area to fresh air.  
 Rinse with water to dissolve any powder left on the person and seek medical attention.

### Skin contact

**First aid:**                      Wash affected areas with soap and water.  
 Seek medical attention if skin symptoms persist.

### Eye contact

**First aid:**                      As powder, Quil-A is highly irritating to the eye mucosa, causes redness, irritation and conjunctivitis.  
 Wash eyes immediately with large amounts of water for a minimum of 15-20 minutes. Remove contact lenses if relevant before rinsing. Seek medical attention.

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<b>Ingestion</b>	Ingestion of Quil-A may cause gastrointestinal irritation with nausea and vomiting.
<b>First aid:</b>	Drink milk, provoke vomiting and seek medical attention.

**5. Fire and explosion data**

<b>Fire fighting media</b>	Combustible Remove material from area if possible. Extinguish using media appropriate for fire source.
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**6. Precautions in case of accidental leakage**

<b>Spill procedures</b>	Spills should be collected, stored and disposed of in accordance with the environmental regulations of the local authorities. Reference to section 13: Disposal
<b>People</b>	Reference to section 8: Exposure control/personal protection equipment.

**7. Handling and storage**

<b>Handling</b>	According to good industrial hygiene.
<b>Storage</b>	Store in sealed packing. Store lyophilized: Do not expose to moisture or temperatures > 25 °C. May be stored frozen.

**8. Exposure control/personal protection equipment**

<b>Techn. precautions</b>	Secure adequate ventilation and use protective breathing mask with dust filter when handling lyophilized product.
<b>Protective equipment</b>	Clothing: Appropriate protective clothing is recommended. Cloves: Appropriate protective gloves are recommended.

Eye protection: Appropriate eye protection is recommended.

## 9. Physical-chemical properties

<b>Description/smell</b>	White or off-white /ebony coloured flaky, crystal-like powder. Foams in aqueous solution. Sticky upon inhalation and cause moistening mucosas. (Avoid inhalation of powder). Smell of aqueous solution: neutral.
<b>Mass density</b>	N.A.
<b>PH</b>	Only relevant for aqueous solutions and then depending upon concentration. Slightly acidic in aqueous solution.
<b>Solubility</b>	Soluble in water and alcohol.
<b>Molecular weight</b>	<b>N.A.</b>
<b>Surfactant activity</b>	Critical micelle concentration > 0.03%

## 10. Stability and reactivity

**Generally:** Risk of decomposition at temperatures >50°C

**Circumstances/  
Materials that should  
be avoided:**

The product is at risk of decomposing by alkaline hydrolysis at pH > 8.5  
The molecule may under some circumstances be sensitive to alcohol.

## 11. Toxical information on (health damaging characteristics)

**Inhalation:** As powder Quil-A saponin is highly irritating to the mucosa of the upper and lower respiratory tract.

**Skin contact:** Frequent or long-term skin contact may cause irritation.

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<b>Eye contact:</b>	Highly irritating to the eye and may cause conjunctivitis.
<b>Ingestion:</b>	Ingestion may cause uneasiness (see references on oral toxicity at the end of the document).
<b>Other:</b>	Hemolytic to red blood cells, (product is surface active).
<b>Long-term effects:</b>	None established
<b>References:</b>	EU directive 67/548/EEC: <b>R36/37</b> Safety / toxicological references are listed at the end of the document.

**12. Environmental information**

<b>Generally:</b>	Soluble in water, acts as a foaming agent. Toxic to fish and marine animals when present in their environment (interferes with gill function).
<b>Degradability</b>	Biodegradable (organic)

**13. Disposal**

<b>Waste/ leftovers/spill</b>	Must be disposed of in accordance with the environmental regulations of the local authorities.
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**14. Transport information**

<b>Status</b>	Not classified as dangerous goods at transport. Protect from humidity and temperatures above 25 °C during transport A specific set of guidelines for transporters available upon request.
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## 15. Information on adjustment

**Status:** Brenntag Biosector has concluded that the material is not affected by the rules for labelling issued by the Miljø- og Energiministeriet in Denmark.

## 16. Further information

**Scope of application:** This purified product is used as an Immunological adjuvant in the preparation of veterinary vaccines.

Saponin from the Quillaja tree is approved as a food additive in Europe under the designation E 999, and it has been used as a foaming agent in root-beer and hair shampoo.

### References:

#### A) Re chemical structure:

Kensil, C.R.; Soltysnik, S.; Patel, U. And Marciani, D.J. (1992)  
Structure/Function relationship in Adjuvants from *Quillaja saponaria*  
*Molina*.  
Vaccines 92. Copyright: Cold Spring Harbor Laboratory Press  
0-87969-405-X/92

#### B) Re safety / toxicology:

Gaunt, I.F.; Grasso, P. and Gangolli, S.D. (1974).  
Short-term toxicity of Quillaja extract in rats.  
Fd. Cosmet. Toxicol. Vol. **12**. 641-650.

Phillips, J.C.; Butterworth, K.R.; Gaunt, I.F.; Evans, J.G. and Grasso, P.  
(1979).  
Long-term toxicity of Quillaja extract in mice.  
Fd. Cosmet. Toxicol. Vol. **17**. 23-27.

Drake, J.j.-P.; Butterworth, K.; Gaunt, I.F.; Hooson, J.; Evans, J.G. and  
Gangolli, S.D. (1982).  
Long-term toxicity of Quillaja extract in rats.  
Fd. Cosmet. Toxicol. Vol. **20**. 15-23.