

# STRUVITE CRYSTALS

...the facts



**HAMBLETON**  
DISTRICT COUNCIL

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**During the canning process of some seafood - particularly salmon, tuna, mackerel and shrimp - magnesium ammonium phosphate can form. Occasionally this chemical forms into crystals - struvite crystals - which can grow large enough to be visible.**

## **Glass or Struvite...**

### **...telling the difference**

The crystals resemble broken glass and consumers may be alarmed and assume that careless factory controls or sabotage is to blame.

On close examination - using a magnifying glass - the difference is obvious. Struvite occurs usually in the form of regularly shaped prisms, with the edges tending to form straight lines. Glass



particles are more likely to be irregular in shape. However, the type of product presentation and the location in the can may produce less regular shaped crystals.

Struvite crystals can be easily identified in the laboratory. And there are simple tests which can be carried out at home:

- try scratching them - struvite are softer than glass and can be scratched
- place in hot acidic water - struvite are soluble in a hot dilution of acid vinegar or lemon juice
- boiling them for a few minutes will completely dissolve the crystals, but not glass.
- squash the crystals between two hard surfaces - they will usually break down in to smaller fragments or powder.

## **Are they harmful?**

No - in fact, the chemicals in struvite occur in many foods, and are valuable nutrients.

As the acid vinegar/lemon juice test demonstrates, struvite dissolves in acids, such as those naturally present in the stomach.

They are easily digested, do not smell or taste and are too soft to do any harm.

Their formation cannot be prevented completely even with the use of additives, such as polyphosphates.