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TOXICOLOGY REPORT ON FIRE RETARDANT- FLS TEXTILE

by

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for

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TOXICOLOGY REPORT ON A FIRE RETARDANT PRODUCT- FLS TEXTILE

INTRODUCTION

1 The product FLS-Textile consists of an aqueous solution of a propriety substance present at approximately 10.2 % w/v with a pH of 6.4. It is also reported to contain minor amounts (<1%) of a preservative (Acibno AC) and a surfactant (Oxid 1412), but these ingredients were not detected in a recent chemical analysis of the product.

2 For the purposes of assessing potential toxic effects the product will be considered as a simple solution of the propriety substance.

3 I have been informed that the product is applied to various textile fabrics, such as drapes, curtains and furniture covers. I have not been informed if it is applied by dipping or spraying, nor what residual quantity of the product is intended to remain on the treated fabrics.

PHYSICAL PROPERTIES

4 After application and drying the treated textile fabrics will contain a residue dispersed in the fabric. As the product is approximately neutral it will not leave any acidic or alkaline residues on the fabrics.

5 The product FLS-Textile is stable under normal temperatures, but has been reported to slowly evolve ammonia over a period of years.

6 Accelerated decomposition occurs at elevated temperatures and rapid decomposition occurs above the melting point of 155° C, with evolution of oxides of nitrogen and oxides of phosphorus.

TOXIC PROPERTIES

Acute Effects

7 Exposure to the product FLS-Textile is only likely to occur for people handling the product, whilst applying it to textiles.

8 Skin effects – it has been reported that exposure to these solutions may cause some degree of skin irritation, but it is unlikely to cause serious effects and it is not reported to be a skin sensitizer.

9 Eye effects – If solutions of the salt contact the eye, irritation occurs but serious eye damage is not noted.

10 Ingestion -solutions of the salt swallowed cause gastric irritation and vomiting, but solutions are not caustic and do not cause internal organ damage.

11 The toxicity of the propriety substance is extremely low. Its oral toxicity, determined for the rat is 6500 mg/kg body weight and its dermal toxicity, determined for the rabbit is 7950 mg/kg body weight.

12 The salt is not retained in the human body and has no target organ for toxic action.

13 According to EU regulations the components of the product FLS-Textile is not considered to be a dangerous compound and there are no particular rules regarding its storage and transport.

Chronic Effects

14 The product FLS-Textile has no known chronic toxic effects.

15 The product FLS-Textile does not have any carcinogenic effects

16 The product FLS-Textile has no known mutagenic effects.

17 The product FLS-Textile has no known reproductive toxic effects.

PRECAUTIONS FOR USE

18 People applying the product to textiles require only simple precautions such as protecting the skin by use of rubber gloves and normal industrial protective clothing.

19 If the product is applied by spraying, people carrying out the process need to avoid inhalation of spray by use of appropriate ventilation or efficient breathing masks.

20 Safe Work Australia have not set any maximum levels for the active component of the product FLS-Textile in the workplace atmosphere.

HAZARD OF THE PRODUCT IN FIRES

21 The other mode of exposure to the product may occur when textile, treated with the product are involved in a fire.

22 As previously indicated, the product decomposes at temperatures greater than its melting point of 155°C, and this will obviously occur in a fire.

23 The decomposition products of the product include oxides of nitrogen and oxides of phosphorus, all of which are toxic to humans by inhalation.

24 However oxides of nitrogen will likely be evolved in much greater quantities in a fire by common textile materials.

25 Oxides of phosphorus, whilst toxic, are unlikely to be produced in sufficient quantities to form an additional hazard in a typical fire.

26 Firefighters who are equipped with normal breathing apparatus should not be troubled by these fumes

ENVIRONMENTAL EFFECTS

27 The major compound in the product acts as an essential nutrient for plants and other organisms and is capable of causing algal blooms, and should not be

discharged into drains or waterways in large quantities. However smaller amounts should not be troublesome.

28 The product FLS-Textile has no known toxic effects to fish or marine organisms.

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