

April 18, 2018

Hazards of cured composites

The hazards of epoxy and associated curing agents are made clear in product SDS (Safety Datasheets) which Gurit provides for all of its products. After curing, the composite parts are often further machined, sanded and cut, which generates composite dust.

Any processors of cured composite products should initiate a full hazard assessment appropriate to the place of work, products and processes used and appropriate measures must be taken to control the dust exposure within the specific environment.

The dust produced may consist of a cured resin matrix, fabric particles/fibres or a combination of both. The exact composition of the dust generated will vary from product to product, depending on the formulation, resin content and the method of dust generation. The degree of cure is an important factor as low cure levels have the potential for the uncured substances (as indicated by the product SDS) to persist.

Although, to date, no specific hazards have been classified for composite dust, there are some general guidelines that can be applied to control the risk of exposure.

The most effective control measure is source point capture of the dust using LEV (local extracted ventilation). The filtration system used must be specific to the type of dust you are producing and can be recommended by the manufacturer. Similarly, the use of a dust mask must be appropriate for the nature of particles created.

The use of general PPE (personal protective equipment) is advised; goggles, coveralls, gloves and good industrial hygiene practices contribute to reduced exposure.

Wet sanding processes can reduce dust levels but hazard assessment of the resulting product must be assessed and appropriate disposal considered.

Note that carbon fibre dust is electrically conductive and can short electrical equipment.

The occupational exposure limits mentioned below serve as good guidance relating to airbourne fibre exposure and dust exposure for working practices.

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Exposure limits:

	Respirable Dust	Total Dust	Respirable Fibre
ACGIH*	3 mg/m ³	10 mg/m ³	1 fibre/ml
Austria	5 mg/m ³	5 mg/m ³	0.5 fibre/ml
Belgium	3 mg/m ³	10 mg/m ³	1 fibre/ml
Denmark	5 mg/m ³	10 mg/m ³	0.1 fibre/ml
Finland	-	10 mg/m ³	1 fibre/ml
France	5 mg/m ³	10 mg/m ³	1 fibre/ml
Germany	1.25 mg/m ³	10 mg/m ³	-
Ireland	4 mg/m ³	10 mg/m ³	1 fibre/ml
Italy	3 mg/m ³	10 mg/m ³	1 fibre/ml
Netherlands	3 mg/m ³	10 mg/m ³	0.5 fibre/ml
Norway	5 mg/m ³	10 mg/m ³	1 fibre/ml
Portugal	3 mg/m ³	10 mg/m ³	1 fibre/ml
Spain	3 mg/m ³	10 mg/m ³	1 fibre/ml
Sweden	5 mg/m ³	10 mg/m ³	1 fibre/ml
Switzerland	3 mg/m ³	10 mg/m ³	0.5 fibre/ml
United Kingdom	4 mg/m ³	10 mg/m ³	2 fibre/ml

*ACGIH (Association Advancing Occupational and environmental Health)

Any queries on the information contained within this document can be sent to regulatory@gurit.com

The above information is correct to the best of our knowledge as at the date shown.