

## Panasonic Industrial Devices Materials Europe GmbH

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### **Item: DMF industrial use at Panasonic Industrial Devices Materials Europe GmbH (PIDMEU)**

DMF is an important solvent for our production process and - at the moment - there are no real technical alternatives due to the special properties of this solvent class. Our products do not contain DMF anymore and are not sold to end users.

We serve European electronic market by high performance and environmentally friendly copper clad laminates (CCL) and prepregs (PR). These products are used in automotive-, industrial-, communication- and medical sectors.

#### Production process

At the location Enns (Austria), PIDMEU is producing base materials for printed circuit boards. The products are made by combining Prepregs (glass cloth coated with Epoxy resin) and Copperfoil. In order to produce Prepregs, a varnish, consisting mainly of epoxy resin, hardener and catalyst dissolved in organic solvents, is prepared. DMF currently is the technically preferred solvent for special hardener – in respect of safety, health and economical issues there are no alternatives leading to the same result.

DMF is delivered in tank lorries and stored in a closed tank. It is transported through pipes to the mixing room into tanks where the varnish is blended. The prepared varnish is transported to the impregnation area through pipes. Glass cloth from large rolls is impregnated with the varnish by housed-in dipping pan. The solvent in the varnish is vaporized in a closed drying chamber. Afterwards it is burnt in a thermal incinerator whose emissions are kept to a minimum. Moreover checks are conducted regularly in order to keep emissions below authority limits.

The final product is mainly used for our CCL production. Additionally the product is sold to producers of printed circuits but in no case to end users.

#### Safety measures

##### Technical measures

Local authority permits a MAK value limit of 4 mg/m<sup>3</sup> in this area. This limit is checked regularly. Nitrogen is used to hinder further emissions during the mixing procedure. The treating area is labelled as Ex-Zone and the exposure regarding solvents is checked regularly.

##### Organisational measures

Due to special protection gear the staff is not exposed directly to DMF. Special internal safety instructions as well as regular safety training are provided.

##### Consequences for DMF restrictions for PIDMEU

We employ 130 people at our plant in Austria. In the case of DMF being severely restricted we see no other possibility but to shut down our production.

Enns, September 17<sup>th</sup>, 2013

Panasonic Industrial Devices Materials Europe GmbH



Takashi Yonezawa  
Managing Director