

RoHS Compliant Dicing Tape

As a result of RoHS restrictions, STM is now offering alternative PVC free and Pthalate free non-uv dicing tapes.

For semiconductor industry customers currently using non-uv dicing tape, such as the industry known “blue tape”, many are faced with the challenge of replacing these tapes with RoHS compliant versions.

RoHS Defined

What is RoHS (**R**estriction of **H**azardous **M**aterials)? Also known as the Directive 2002/95/EC, RoHS originated in the European Union and restricts the use of specific hazardous materials found in electrical and electronic products. These restricted materials include:

- Lead
- Cadium
- Mercury
- Hexavalent chromium
- Polybrominated biphenyls (PBB)
- Polybrominated diphenyl ethers (PBDE).

For Cadmium and Hexavalent chromium, there must be less than 0.01% of the substance by weight at raw homogeneous materials level. For Lead, PBB, and PBDE, there must be no more than 0.1% of the material, when calculated by weight at raw homogeneous materials. Any RoHS compliant component must have 100 ppm or less of mercury and the mercury must not have been intentionally added to the component.¹

RoHS and PVC

PVC has been at the center of a controversial debate related to harmful substances and environmentally conscious waste disposal. The RoHS Directive controls the restriction of these elements in PVC manufacturing. This means, companies must ensure they do not use materials or substances that contain the restricted substances: for our customers this refers to PVC based non-uv dicing tapes.

Some dicing tapes have a base film made of Polyvinyl chloride (PVC), a synthetic material. PVC, unlike other base film types such as polyethylene or polyolefin, is preferred due to its evenly expandable nature. Even expansion allows for tape to be stretched uniformly in all directions when die are picked off of tape. PVC is more stretchy and expandable than standard polyolefin tape counterparts.

¹ <http://www.rohscompliancedefinition.com/>

Although pure PVC is a rigid material, it can be made pliable and its properties can be modified for dicing tape use by the addition of stabilizers: lead, barium, calcium, cadmium, or organotin compounds.² Additionally, its mechanical properties can be modified with certain plasticizers such as phthalates. These 2 elements are flame-retardants and are often used in PVC tape manufacturing. As defined above, the RoHS directive targets Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE) – the components in plasticizers and phthalates.

STM Solutions

STM offers customers seeking RoHS compliant dicing tape 2 options. The first option is our T series, PVC based, non-uv dicing tapes. Although these tapes are PVC based, they are manufactured within RoHS guidelines and have been tested to ensure manufacturing ingredients fall below the PPM recommendations. Additionally, they are manufactured Pthalate Free. Unfortunately, as RoHS restrictions are tightening and moving to ban PVC entirely, we recommend customers also investigate our second option: NON PVC dicing tape.

The second option, our NON PVC dicing tape is a non-uv dicing tape composed of a NON PVC base film. It is also Pthalate Free. Customers' dicing applications may also dictate which tape not only performs best to meet their needs, but also meets the RoHS directives.

To receive a sample of these products or discuss your needs further, please contact a sales rep at STM tape 408 451 2000, sales@semiconductortapes.com

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² Green Paper, Environmental Issues of PVC, Commission of the European Communities