SUSTAnews

RÖCHLING Sustaplast

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New ESD Plastics prevent Explosions and protect Electronic Components

Most plastics are known to be electric insulators; this makes them susceptible to static charging due to friction. Every year, the uncontrolled static discharge can cause leads to millions in losses in businesses. Particularly hard-hit are the microelectronics and explosion protection areas.

Microelectronics

ESD shoes, ESD flooring, ESD work tables and, not least: **ESD plastics.** **Everyone's talking about ESD.**

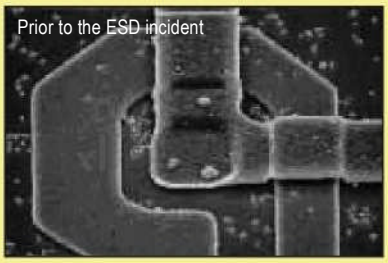
ESD = Electrostatic discharge. The aim is to protect the sensitive electronic components, wich are increasing in sensivity against this.

Simply walking on carpet, for instance, can cause a static charge of up to 30,000 V.

Discharges of around 3,500 V or more can be experienced as an 'electric shock' on people. Yet it only takes 30 V to damage the most delicate electronic components!

The reject rate due to 'ESD-stressed' semiconductor components is currently approx. 10 %. This often leads to very expensive recall campaigns as the pre-existing defect is not detected prior to delivery.

Electronic Component (enlarged to 5,000 times the original size)



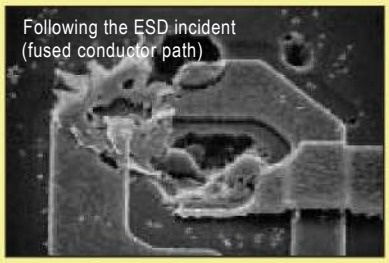


Image: www.stat_x.com

Explosion Protection

In potentially explosive atmospheres (EX zones) – atmospheres containing a mixture of air and combustible gases, vapours, mist or dust – all it takes is a single spark to unleash a catastrophe. One of the most well-known catastrophes is the explosion of the Hindenburg airship, which took the lives of 36 people.

CE ATEX Directive 94/9/EC

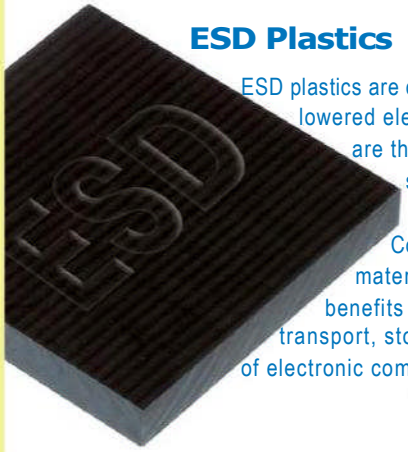
This Directive offers provisions of law pertaining to equipment and protective systems in potentially explosive atmospheres. Among other things, the Directive identifies electrostatic discharges as a potential source of ignition that 'must be prevented by means of appropriate measures'. Possible implementations of these measures can be found in the following guidelines:

DIN 13463-1

If the surface resistivity amounts to ≤ 10^9 Ω, an electrostatic charge is prevented.

Federal Institute for Geosciences and Natural Resources (BGR) Guideline 132
(Preventing risk of combustion due to electrostatic charging)

In potentially explosive atmospheres, it is principle importance to use grouding objects that are conductive (surface resistivity ≤ 10^4 Ω) or capable of electrostatic discharge (surface resistivity 10^4 -10^{11} Ω).



ESD Plastics

ESD plastics are characterised by their lowered electrical resistance and are thus capable of electrostatic discharge or are even conductive.

Consequently, these materials offer enormous benefits for the manufacture, transport, storage and packaging of electronic components.

RÖCHLING Sustaplast ESD Types

'SUSTARIN C ELS/AS' is now 'SUSTARIN C ESD 60/90'
To make product designation even clearer, we have renamed the previous modifications. 'ELS' is now referred to by the suffix 'ESD 60', and 'AS' is now 'ESD 90'. All of the newly developed ESD types have also been named in accordance with this system.

Material		Surface Resistivity according to BGR Guideline 132
SUSTAMID 6G ESD 60	NEW!	10^4 – 10^6 Ω conductive/capable of electrostatic discharge
SUSTAMID 6G ESD 90	NEW!	10^9 – 10^{10} Ω capable of electrostatic discharge
SUSTAMID 6 ESD 60	NEW!	≤ 10^4 Ω conductive
SUSTARIN C ESD 60		10^3 – 10^5 Ω conductive/capable of electrostatic discharge
SUSTARIN C ESD 90		10^9 – 10^{11} Ω conductive/capable of electrostatic discharge

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