

Original edition: May 16, 2016

Latest revision: June 16, 2016

## Product Information Sheet

Item	Description																		
1. Identification	Product category : Copper Clad Laminate																		
	Product designation : R-1515A																		
	Company name : Panasonic Corporation, Automotive & Industrial Systems Company																		
	Location : 111,Azaishizuka,Koriyama,Fukushima 963-8556 Japan																		
	Department : Quality Assurance Koriyama Department, Quality Center																		
	:																		
	Telephone number : +81-24-944-2903 FAX number : +81-24-944-6086																		
2. Hazards identification	GHS classification : Not applicable to Classification Standard																		
	Hazard : Not applicable																		
	Hazardous property : Not applicable																		
	Environmental impact : Not applicable																		
3. Composition / information on ingredients	Classification (single product or composite) : Composite																		
	Ingredients and contained amount :																		
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Ingredient</th> <th style="text-align: center;">CAS Number</th> <th style="text-align: center;">Contained amount (wt%)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Cured epoxy resin</td> <td style="text-align: center;">None</td> <td style="text-align: center;">1 to 25</td> </tr> <tr> <td style="text-align: center;">Inorganic filler</td> <td style="text-align: center;">Trade secret</td> <td style="text-align: center;">5 to 35</td> </tr> <tr> <td style="text-align: center;">Woven glass cloth</td> <td style="text-align: center;">65997-17-3</td> <td style="text-align: center;">10 to 55</td> </tr> <tr> <td style="text-align: center;">Copper foil</td> <td style="text-align: center;">7440-50-8</td> <td style="text-align: center;">1 to 65</td> </tr> <tr> <td style="text-align: center;">Total</td> <td style="text-align: center;">-</td> <td style="text-align: center;">100</td> </tr> </tbody> </table>	Ingredient	CAS Number	Contained amount (wt%)	Cured epoxy resin	None	1 to 25	Inorganic filler	Trade secret	5 to 35	Woven glass cloth	65997-17-3	10 to 55	Copper foil	7440-50-8	1 to 65	Total	-	100
	Ingredient	CAS Number	Contained amount (wt%)																
	Cured epoxy resin	None	1 to 25																
	Inorganic filler	Trade secret	5 to 35																
	Woven glass cloth	65997-17-3	10 to 55																
	Copper foil	7440-50-8	1 to 65																
	Total	-	100																
4. First aid measures	If inhaled : When you inhaled fine powder generated during handling and processing, gargle with clean water and, as needed, seek medical advice.																		
	In case of skin contact : When your skin is in contact with fine powder generated during handling and processing, wash your skin with a soap and clean water and, as needed, seek medical advice.																		
	In case of eye contact : When your eyes are in contact with fine powder generated during handling and processing, never rub your eyes by hand and wash them with clean water immediately and, as needed, seek medical advice.																		
	If swallowed : When you inhaled fine powder generated during handling and processing, gargle with clean water and, as needed, seek medical advice.																		
5. Fire fighting measures	Fire extinguishing method : Battle the fires from the windward side to avoid inhalation of toxic gas. Wear respiratory protection equipment depending on the situation.																		
	Extinguishant : Use extinguishants such as water, powder, foams, carbon dioxide although nothing specified.																		

Item	Description
6. Accidental release measures	Precautions for human body : Wear a protective mask, protective gloves and protective glasses as needed.  Collection and purification method, etc. : When materials such as powder and mills ends have spilled on the floors, etc., clean them quickly and quietly so that powder dust does not fly and treat them in an appropriate way in accordance with country's or regional restrictions.
7. Precautions for handling and storage	Handling : If powder dust generated from cutting or drilling process is attached on skin, skin may be irritated or poisoned. Wear protective tools when operating at such a workplace to avoid direct contact with powder dust. Further, wear protective glove to avoid injuries on hands by sharp edge of the product.  Storage : Avoid direct sunlight and store the product indoors with controlled temperature and humidity at normal conditions.
8. Exposure controls and protection measures	Control concentration : Not applicable Allowable concentration Japan Society for Occupational Health : The Japan Society for Occupational Health : Class 3 dusts(Inorganic and organic dusts other than Class 1 and 2); Respirable dust 2mg/m <sup>3</sup> , Total dust 8mg/m <sup>3</sup>  ACGIH : Not applicable  Equipment measures : Provide a local ventilation equipment since powder dust generates during processing.  Protective equipment Protective mask : Necessary wearing Protective glass : Necessary wearing Protective glove : Necessary wearing Protective cloth : Necessary wearing
9. Physical and chemical properties	Appearance : Solid sheet Melting point (°C) : None Specific gravity(23°C) : 1.8 to 2.1 (without copper foil)
10. Stability and reactivity	Stability, reactivity : Chemically stable in ordinary temperatures
11. Toxicity information (including symptoms of humans and epidemiological information)	Skin corrosivity : None known Irritating nature (skin, eyes) : None known Sensitizing property : None known Acute toxicity (including 50% lethal amount, etc.) : None known  Chronic toxicity : None known Carcinogenic : None known Mutagenesis(microorganism, chromosomal aberration) : None known Reproductive toxicity : None known Teratogenicity : None known

Item	Description
12. Environmental impact information	Resolvability : None known Accumulation property : None known Fish toxicity : None known Others : None known
13. Disposal considerations	Outsource disposal of waste products to industrial waste disposers. Follow relevant national and local regulations when disposing waste products.
14. Transportation considerations	There is no safety problem in transportation. However, avoid moisture absorption, exposing to water and rough handling during transportation.
15. Regulatory information	<ul style="list-style-type: none"> <li>• Follow relevant national and local regulations for processing our product.</li> <li>• Ensure the environment for processing this material in compliance with federal requirements and ensure conformity to local regulations.</li> <li>• Processing this product is followed by the competent regulations in an applicable country or region.</li> </ul>
16. Other information	<p>The product handled in this document is not categorized as "chemical product", we're not legally required to provide customers with the SDS documents. This document contains the general information needed for keeping safe working environment for customer's reference, and is supposed to provide to customers upon individual request.</p> <p>As original chemical structure of raw materials have already extinguished by polymerization, it shall not be deemed as an exposure of raw materials even if the dust of cured dielectric layer is appeared in customer's process.</p> <p>However, please be advised that customer has responsibility to secure an safe working environment by installing the ventilation equipment as described in Article 8 of this document. Any use of our product for an unordinary use or under unrecognized situation are not supposed. In such a case, customer will be responsible for taking the appropriate measure to secure the safe working environment.</p> <p>As actual component contents vary according to the detailed specification of each multilayer materials., the table described in Article 3 in this document covers entire range of all of product specifications.</p> <p>The description in this document is based on the information at the time of issuance or revision. Customers have to be advised that any part of information in this document may contain deviations from latest regulations or product specifications.</p> <p>Cited references ;            Chemical Risk Information Platform (NITE)            SDS (from source material suppliers) etc</p>