



LATIOHM

Flexibility using anti-static and partially-conductive materials

Key benefits:

- **Broad range of base resins;**
- **Wide range of colours;**
- **Non-sloughing;**
- **Reduced weight of the finished parts versus metals;**
- **Controlled and consistent resistivity levels;**
- **Perform independent of humidity;**
- **Tailor-made products in order to satisfy the requirements of all projects (combination of mechanical and thermal properties, flammability, chemical resistance and so forth).**

Almost all commercially-available engineering plastics are inherently electrical insulators and can retain electrostatic charge in normal-use conditions. The charge accumulated can be dissipated by electrostatic discharge (ESD), which, if not carried out in a controlled manner, can cause damage by several mechanisms. For example, if the plastic is used as a housing for sensitive electronic components the abrupt discharge may erase or alter magnetic data. The effects can also be on people, from simple perception of a discharge to physical damage. In a worst-case scenario, as in the use of breathing apparatus where the user is investigating a leak of flammable material such as gas or petroleum vapour, the generation of a spark due to such a discharge can have catastrophic consequences. Different methods can be used to make an otherwise insulating polymer either statically dissipative or electrically conductive:

- Add to the polymer conductive fillers: metal fibres / flakes, carbon fibres, carbon powder;
- Use additives which improve the surface resistivity;
- Use inherently conductive polymer (ICP) or inherently dissipative polymer (IDP) compounds;
- Metal plating.

With its close-to 60 years of compounding experience, LATI has at its disposal a wide range of resins, additives, and the all-important know-how to make compounds reliably covering a spread of surface resistivities from 10 to 10¹² Ohms; some also in various colours. These materials, through a combination of lower weight and fabrication costs, together with process simplification, allow the user to advantageously substitute materials and/or surface-coating treatments traditionally employed to achieve the desired conductive or dissipative effect.

LATI is willing to share with you its expertise in this field, and its T.S. and R&D Teams are at your complete disposal to analyse your requirements and collaborate on project developments.

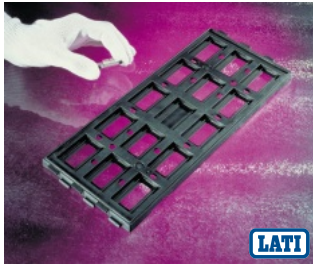
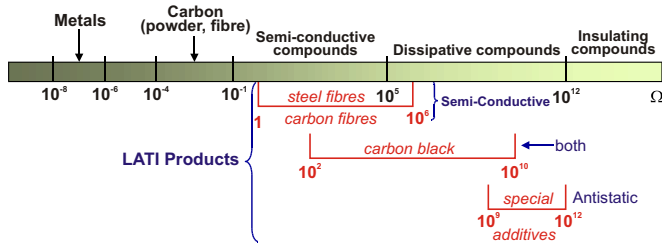
PROPERTIES of LATIOHM (typical values)

	Test Method	Units	LATIOHM 36/07 PD01 G/20	LATIOHM 52/09-10 PD02	LATIOHM 52/09-10 SD01	LATIOHM 62-03 PD01 G/20	LATIOHM 62-08 PD02 G/30	LATIOHM 57D-05 G/15	LATIOHM 75/4-05 PD01 G/20-V0	LATIOHM 75/4-03 PD01 G/20
General Properties										
Base resin			ABS	PP	PP	PA 6	PA 6	PPA	PBT	PBT
Static grade			Permanent	Permanent	Semi-permanent	Permanent	Permanent	Permanent	Permanent	Permanent
Glass fibre content		%	20	-	-	20	30	15	20	20
Density	ISO 1183	g/cm ³	1.32	1.00	0.95	1.39	1.41	1.34	1.58	1.55
Melt flow index	ISO 1133	g/10 min	6 (220/10)	5 (230/2.16)	12 (230/2.16)	-	-	-	25 (250/2.16)	17 (250/2.16)
Mechanical Properties										
Tensile modulus	ISO 178	Mpa	13000	1000	1200	15000	9000	13500	15000	16000
Tensile strength	ISO 527	MPa	90	20	21	190	80	192	130	150
Elongation at break	ISO 527	%	1.2	98	13	2.4	2	1.9	2	1.5
Notched IZOD	ASTM D256-A	J/m	40	140	430	100	75	52	85	60
CHARPY unnotched	ISO 179 1eU	kJ/m ²	12	-	NB	52	43	35	35	38
CHARPY notched	ISO 179 1eA	kJ/m ²	3.3	14	35	9	8.5	3.5	8	6.1
Electrical Properties										
Volume resistivity	ASTM D257	Ohm-cm	1E+06	1E+09	1E+10	1E+03	1E+08	1E+04	1E+04	1E+03
Surface resistivity	ASTM D257	Ohm	1E+06	1E+09	1E+10	1E+03	1E+08	1E+04	1E+04	1E+03
Thermal Properties										
VICAT temp. 49N	ISO 306	°C	-	59	60	215	161	228	210	215
HDT	1.82 Mpa	ISO 75	°C	105	45	48	207	154	258	207
	0.45 Mpa		°C	-	64	72	219	204	267	220
Flammability										
UL94 - 1.47 mm	UL 94		-	-	-	-	-	-	V0	-
UL94 - 0.71 mm	UL 94		-	-	-	-	-	-	V0	-

NB = not broken

LATI Resistivity Values

- Resistivity varies with **temperature**
- Resistivity varies with **humidity**
- **Surface Resistivity** is usually 1/10th of **Volume Resistivity**

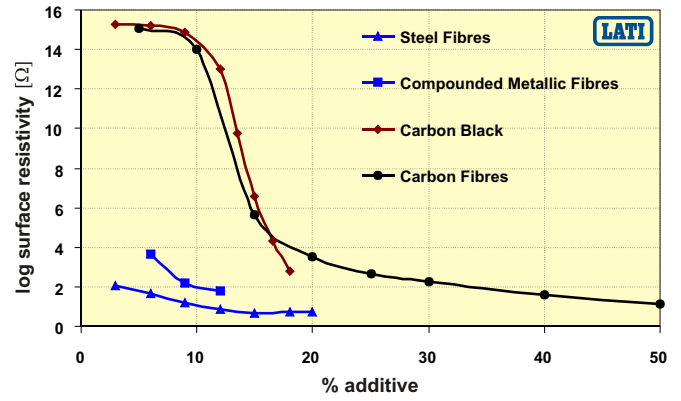


Chips carrier tray

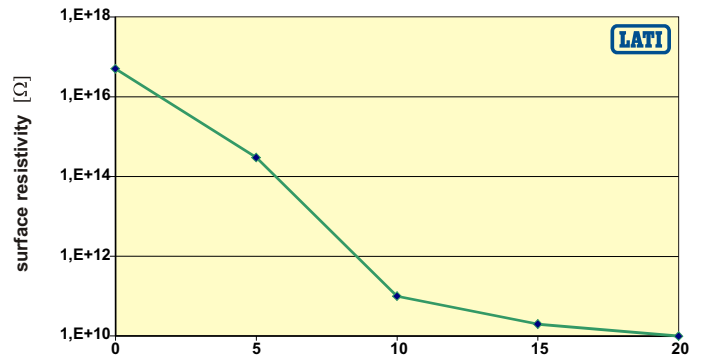


Textile machinery - housing

Conductive Plastics

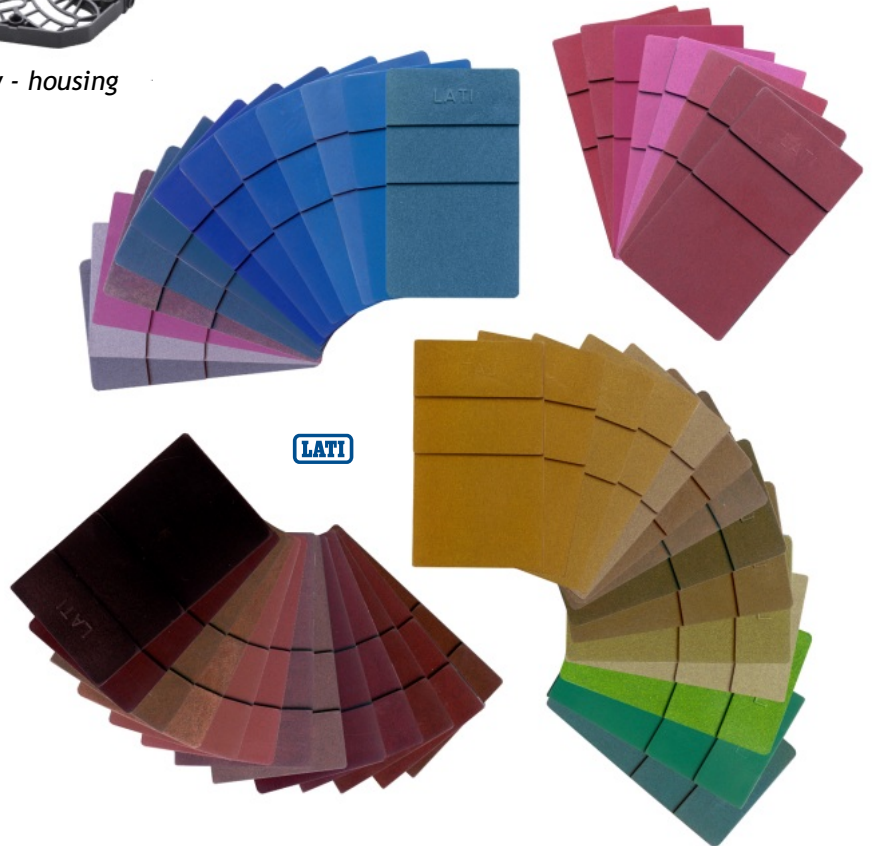


Conductivity - % IDP Inherently Dissipative Polymer



Industry Sectors:

- **Business Machines;**
- **Construction;**
- **Electronic;**
- **Food;**
- **Material Handling;**
- **Medical;**
- **Military;**
- **Textile;**
- **Transport;**
- ...



Note: should you be interested in receiving a more detailed brochure, just contact our Offices

This document contains information based on average values as obtained from the results of laboratory tests and observations made on our materials. Tested materials were injection moulded, used in their natural colour, and conditioned in compliance with Standard ASTM D 618, procedure A (40 h - 23°C - 50%R.H.). These data refer to our best technical and scientific knowledge at the moment of testing and cannot be used as a basis for the development of applications.

For a better assessment of the materials, you are kindly requested to contact our technical or commercial offices, which are at your disposal and will supply detailed information on the most suitable characteristics for the intended use. With reference to DPR n. 224 dated May 24, 1988 issued in accordance with EC Guide-lines 85/374, LATI Industria Termoplastici S.p.A. declines all responsibility arising from an improper use of the products described in this document.