

Message

■ "Sustainable Development" is a common philosophy of "the United Nations, EarthSummit" aiming at moderate development by coexistence with the environment.

Also, at the end of 2015, "the Paris Agreement, Framework Convention on Climate Change" was adopted, and each country has begun to reduce greenhouse gas emissions.

■ The use of thinned wood and edge materials from the conservation of forests as industrial materials for local production and consumption leads to revitalization of the forest industry and resource conservation. And reducing consumption of petroleum-derived plastics can reduce oil dependence.

We made "innovative Wood Plastic Composite [i-WPC]" which can easily be injection molded.

i-Compology Corporation is looking for a company that will transform this A-ha material into A-ha products.

We create
"A-ha!
Materials".



i-Compology™
i-Compology Corporation

"i-Compology" is a coined term for "Innovative Composite Technology". We are trying to bring about innovation with a new approach to polymer composite technology which the predecessor could not do.

Company Profile

■ **Company name**
i-Compology Corporation

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■ **Business content**
Environment Bioplastic
Development, manufacture and sale of functional composite plastics materials and products

Environmental Bio-composite

i-Compology™
i-Compology Corporation

Injection Moldable Innovative Wood Plastic Composite [i-WPC]

We create
"A-ha! Materials".

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Natural Oriented Plastic... Wanted! Your Brilliant usage.

i-Compology™
i-Compology Corporation

Effect

■What is new?

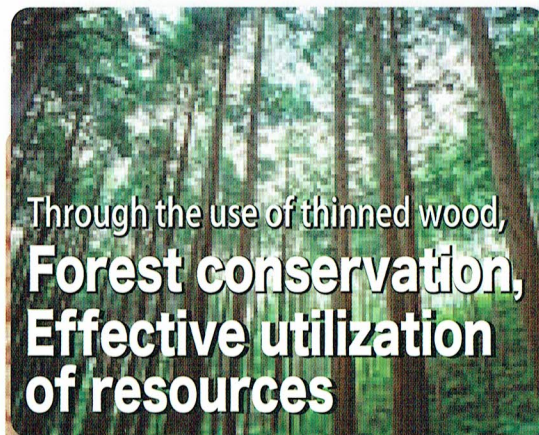
Until now, there were extrusion molded articles like long shape products, but there was no "Wood Plastic Composite [WPC] that can beautifully be mass-produced by injection molding". Because, wood powder is thermally decomposed at high temperature, and it becomes black and smells. Injection molding requiring especially low melt viscosity was regarded as a difficult dream technology.

Now, "innovative Wood Plastic Composite [i-WPC]" that can be injection molded easily with general-purpose injection molding machines and molds has been made!

■Environmental bio material !

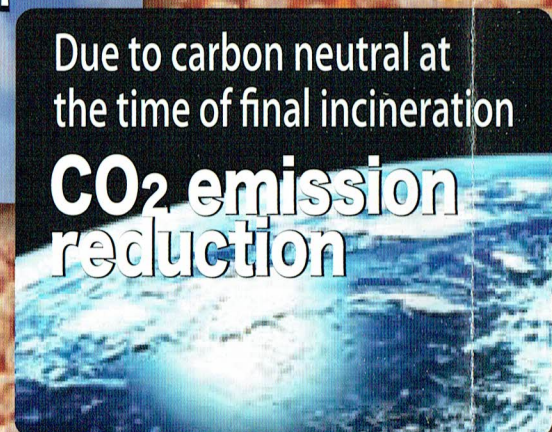
Wood Plastic Composite [WPC] is "Coexisting material with the environment".

- ① Significant reduction of CO₂ emissions during incineration treatment.
(Wood powder is carbon neutral, it is not regarded as a source of CO₂.)
- ② Forest preservation through use of thinned wood.
- ③ Effective utilization of thinned wood as industrial raw material instead of fuel.
Petroleum-derived plastics can be reduced.



Through the use of thinned wood,
**Forest conservation,
Effective utilization
of resources**

Reduction of use of petroleum derived plastics
Local production and consumption of thinned wood
Raw material diversification



Due to carbon neutral at the time of final incineration
CO₂ emission reduction

Performance

■Physical properties go up !

It is strange, but adding soft wood powder increases the elastic modulus and the heat resistance considerably.

Test items	Test method	Unit	General-purpose Polypropylene	i-WPC	
				woodpowder31wt%	woodpowder51wt%
Specific gravity	JIS K-7112	—	0.91	1.025	1.101
Tensile test	Breaking strength	MPa	35	—	35
	Yield strength	MPa	—	32	—
	Elongation	%	—	5	<5
Bending test	Flexural strength	MPa	41	↗ 46	↗ 55
	Modulus of elasticity	MPa	1,350	↗ 2,000	↗ 3,570
Charpy impact test	Impact value	KJ/m ²	3.3	2.9	3.3
Heat distortion temperature	1.80MPa	°C	—	↗ 71	↗ 94
	0.45MPa	°C	100	↗ 115	↗ 130

The data described in this document are representative examples of measured values obtained under specified conditions and they are not guaranteed the physical properties of the application/product.

Design

■What is design and processing?

As well as coloring, painting and adhesion which was difficult with polypropylene can be done.

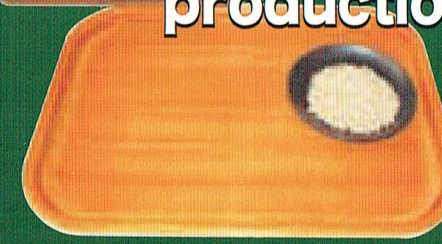
The width of the design expands with unique material texture.

From Japan, the world's state-of-the-art
Injection molding



Molding

With your injection molding machine and mold,
Mass production



Sheet molding, Also blow molding
Various shaping can be chosen



Innovative Wood Plastic Composite [i-wpc]

Dimension stability
Static suppression

Design

Coloring, painting and adhesion is also possible

It has a warmth feeling and moist feeling of wood,

Performance

Elasticity up than base polymer

Flexural modulus increases to 1.5 times when 31 wt% wood powder is added
2.6 times when 51 wt%.

Heat resistance up than base polymer

The heat distortion temperature (0.45 MPa) rise to +15°C when 31 wt% wood powder is added
+30°C with 51 wt%.

Various use in wide range fields

Light, strong, wood texture. For building materials, daily necessities, household appliances, machine parts, automobiles, etc.