

PLASTIC FREE CLAIM

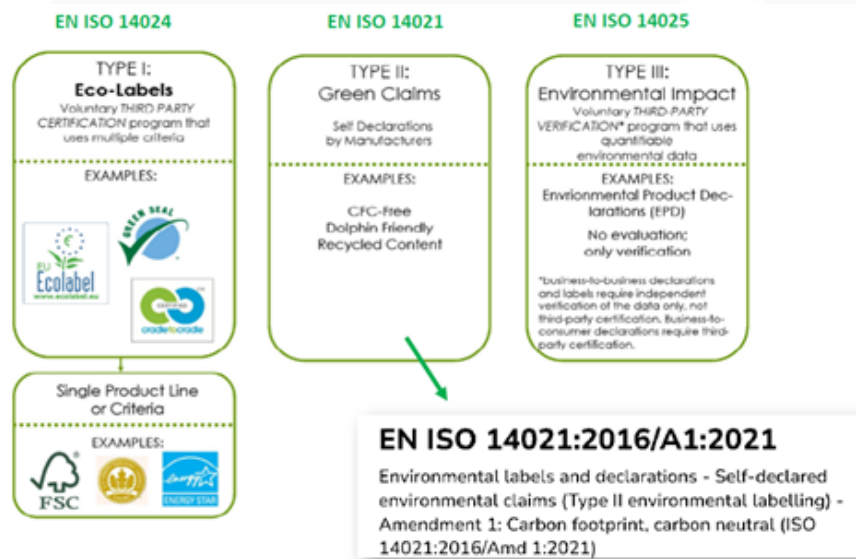
SAFE SUSTAINABLE SOLUTIONS



PLASTIC FREE CLAIM

In the global context, there are multiple environmental claims, which can be grouped into three categories:

- Type I, the Eco-Labels, are voluntary certifications carried out by third parties;
- Type II (Green Claims) are self-declarations, such as the well-known "Carbon Neutral";
- Type III concerns the environmental impact and the life cycle of a product, where no evaluations are made, but verifiable and comparable data are provided.



The definition of "Plastic Free" falls under Type II claims, and therefore self-declarations. This claim is complex and often associated with greenwashing issues. The term is frequently used vaguely, and the use of polymers in specialty materials, such as paper, can complicate the "Plastic Free" declaration. European and Italian regulations, such as the REACH Regulation (specifically the 2023/2055 update) and the SUP Directive (Single Use Plastics), provide definitions that can be used to determine when a product is truly free of plastic.

There are several companies and consulting firms that assist businesses in verifying and achieving Plastic Free certification, but caution is advised, as product certifications must be issued by accredited bodies according to ISO 17065, which must include the specific scheme in their scope of accreditation. If the scheme is not recognized, the certification could be subject to disputes, putting companies at serious risk.



OUR SOLUTION

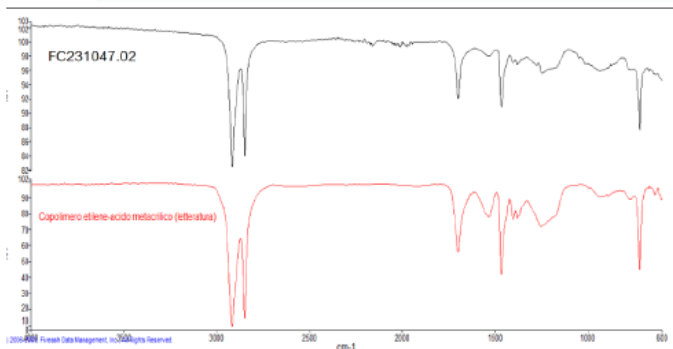
An important aspect of the “Plastic Free” concept is defining when a product can truly be considered free of plastic. The ISO 14021:2016 standard states that a “free of...” claim can only be used if the specific substance is present only in trace amounts. Although there are no laws that explicitly define the term “Plastic Free,” some regulations, such as DM 21/3/73 in Italy and BfR Recommendation XXXVI in Germany, provide guidelines on the composition of paper and allow the use of certain substances in trace amounts, such as dispersing agents and anti-foaming agents, in the production process. **Food Contact Center supports companies in verifying that paper products can indeed be considered plastic free and can assist the client in all stages of self-declaration according to ISO 14021 for the creation of a self-declared claim, backed by a valid regulatory and analytical dossier produced by a third-party.**

Food Contact Center Case Study: Presence of microplastics in products declared "plastic free"

The case study conducted by the Food Contact Center, presented at national and international conferences, evaluated the presence of plastic, both in oligomeric and monomeric forms, in paper products declared “Plastic Free.” The samples analyzed were paper straws and cups. The FTIR analysis, later confirmed by TGA-DSC, revealed that the straws had a signal identical to that of pure cellulose, while the cups were found to have a coating associated with an ethylene-methacrylic acid copolymer, a commonly used polymer. This raised doubts about the possibility of declaring the product plastic-free.

FTIR Spectrum:

- Black line: cup sample
- Red line: characteristic spectrum of the identified copolymer



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Speech on Plastic Free Claim

Additionally, the same samples were tested through hot and cold water extraction to verify if plastic particles migrated into the aqueous solution (extraction according to UNI EN 645 and UNI EN 647 standards). From the hot extraction, it was found that the straw sample released polymeric material, likely attributable to a dispersing agent used during the paper production process.

	1047.01 A - FC231047.01 A			1047.01 B - FC231047.01 B		
	Particelle su campione (N/L)			Particelle su campione (N/L)		
	20-50um	50-100um	100-500um	20-50um	50-100um	100-500um
Polyethylene	0	0	0	59	0	0
Polypropylene	71	36	0	593	296	178
Polyethylene terephthalate	0	9	0	1482	0	0
Polycarbonate	27	0	0	415	0	0
Polystyrene	0	0	0	59	0	0
Polytetrafluoroethylene	0	0	0	711	59	0
Polyvinyl chloride	0	0	0	3497	0	0
Polyamide	53	0	0	16952	771	237
Polymethyl methacrylate	124	9	0	59	0	0
Polyurethane	9	0	0	5868	296	0
Acrylonitrile butadiene styrene	9	0	0	2312	0	0
Other particles	604	80	62	5157	771	415

Companies that choose to pursue the “Plastic Free” path must verify that their products do not contain plastic in amounts exceeding “trace” levels in order to substantiate the truthfulness of their claim, in accordance with ISO 14021, which regulates self-declared environmental claims.

Cerchio rosso: Presenza di materiale plastico nel campione di cannuccia in seguito ad estrazione a caldo

La Direzione del laboratorio