A lot has changed in recent years. Nowadays, shoppers in countries, such as for example Germany, stow their groceries in backpacks; they use paper bags and reusable bags. Yet not all has changed. Fruit and meat are still packed in plastic. Packaging is an effective way of keeping products fresh and hygienic, and providing added value to the product it contains. In the light of this important role, it is therefore hardly surprising that in terms of the materials used, plastic packaging, too, continues to evolve.

While PE (polyethylene), PET and others have long been the materials of choice, the past several years have seen a rapid increase in the use of biodegradable or compostable materials, such as PLA, PBAT and the like – offering the same benefits as conventional durable plastics. And it is not just Germany. France has new regulations; developments are ongoing in European countries such as The Netherlands, Italy and Switzerland, as well as in China and other parts of the world. Packaging, packaging materials and end-of-life options are widely discussed topics of focus in the media.

There are vivid discussions on, first of all, how to raise consumer awareness, as well as on how to increase awareness and to ensure end consumers are provided with clear, accurate and understandable information. How to make the difference clear to consumers between mechanically recyclable and organically recyclable plastic? And how to make sure that packaging can really be biodegraded by microorganisms and will end up as beneficial biomass and CO₂ within a reasonable period of time in a defined environment?

There were complaints that biodegradable and compostable bags did not disintegrate fast enough, that they failed to decompose in the garden compost pile, or when put in or left on soil [1]. Obviously, the communication to end consumers about such products needed to be improved.

Standards have been developed in which accurate testing methods have been laid down to determine the appropriate end-of-life option for such products. These standards are based on common sense and have been agreed on in standardization committees worldwide.

Standards are indispensable instruments in ensuring safety technology, in protecting health, the environment, and customer interests, generally. They play a vital part in the national economy and lay the foundations for the free exchange of goods and services.

In Europe, EN 13432 [2] lays down the requirements for compostable packaging. It contains distinct pass/fail criteria regarding the industrial compostability of packaging and is also one means of obtaining marketing approval for such products in Europe. For the United States, the key standards are ASTM D 6400 [3] and ASTM D 6868 [4]. Australia and New Zealand refer to the AS 4736 [5] standard. As can be seen, different standards are applicable for different countries. The good news is that there are many similarities in the tests and pass/fail requirements; the bad news is there are also some differences.

Next to packaging that is solely suitable for industrial composting, there are also products that can be organically recycled in the compost pile at home. Standards for home compostable packaging and plastics have therefore also been developed. France recently introduced the NF T 51-800 [6] standard and Australia brought out its AS 5810 standard [7]. The main differences to EN 13432 are the lower temperatures at which biodegradation and disintegration are tested and, in connection with this, the longer time spans allowed for these processes.

Plastic packaging materials that are biodegradable or on soil are also available, although relevant standards are still under development. There is, however, a technical report suggesting the criteria:

The ASTM D 6691 [8] standard offers a test method to assess biodegradation in water, while another standard, ASTM D 7081 [9] which related to non-floating biodegradable plastics in the marine environment, was withdrawn in 2014. To date, tests for biodegradability in water or the marine environment have been unable to be carried out in conditions reflecting the actual environmental conditions, regarding such factors as temperature, depth, etc.:

More importantly, the ocean should never be considered a suitable place for the disposal of waste. Certification for biodegradability in the ocean/freshwater is a delicate topic, as it could imply that littering the ocean with bioplastics could be an end-of-life option. In our decided opinion – and not ours alone – waste should be treated before it ever has the opportunity to enter the sea, managed by the circular economy.

Summarizing: Different standards relate to different composting/biodegradation options and standards also differ locally.

Confusing? The good news is that there is no need to worry about knowing all the details of all these standards when and if you plan to seek certification. Simply contact a certification body (such as e.g. DIN CERTCO) about your market needs, and you will get the full support and guidance you require throughout the process.

DIN CERTCO has extended its certification services over the past couple of years to provide applicants with enduring, internationally accepted conformity marks. With more than 40 years of experience in certification services, they offer the highest quality possible in conformity assessment.

Founded in 1972 by the German Institute for Standardization, DIN e. V., DIN CERTCO has continuously worked to maintain its reputation in certification services around the globe. Thanks to the separation between DIN CERTCO’s testing and assessment functions, and their accreditation to ISO/IEC 17065, their quality marks ensure competence, independence and impartiality.
The certification services offered by DIN CERTCO include the following:

**Industrially Compostable Products**

Based on the DIN V 54900 standard series, which preceded EN 13432, DIN CERTCO supported the development of the certification scheme for the **Seedling compostability logo** of European Bioplastics. Since 1997, certificate holders around the world have labeled their products with this logo as a way to differentiate themselves from their competition. When the EN 13432 standard was released in 2000, it became mandatory for countries in the European Union and was consequently implemented. In the meantime, other standards, e.g. ASTM D 6400, ISO 17088 [10], ISO 18606 [11] and EN 14995 [12], were added to the certification scheme to cover market needs.

DIN CERTCO has also implemented the AS 4736 standard, with ASTM D 6868 currently under preparation, which allows certificate holders to use the **DIN-Geprüft industrial compostable** conformity mark.

Compostability linked with biodegradability represents an important element of the organic recycling management system.

Identification and, thus, the return of products into the materials cycle is made possible by certification and by a system of unique labelling.

**Home Compostable Products**

DIN CERTCO offers certification for products made from compostable materials that are compatible with home and garden composting, granting these products the right to bear the **DIN-Geprüft home compostable** conformity mark.

The mark serves an informative and a commercial purpose, both for consumers and in B2B marketing. In Australia, certification for garden compostability can be obtained in accordance with Australian standard AS 5810. With this frequently revised norm as the basis for assessment, certification indicates conformity with the requirements of this standard.

DIN CERTCO also provides certification according to NF T 51-800 since 2016, enabling you to show your compliance with the new French requirements.

**Products, biodegradable in or on soil**

This certification was designed for products that are intended to be used in or on soil, such as mulch films and similar products used in agriculture or gardening. DIN SPEC 1165 (CEN/TR 15822) is a technical report which suggests how to test such products in order to prove their suitability for biodegradation in soil.

[2] EN 13432:2000-12 Packaging - Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging; German version EN 13432:2000
[4] ASTM D6868-11 Standard Specification for Labeling of End Items that Incorporate Plastics and Polymers as Coatings or Additives with Paper and Other Substrates Designed to be Aerobically Composted in Municipal or Industrial Facilities
[10] ISO 17088-2012 - Specifications for compostable plastics