MarbleBase

Frequently Asked Questions

MarbleBase offers a radically different approach to sustainable material sourcing. It contains 80% marble mining waste and up to 20% recycled polyethylene, and can also be recycled or burned for energy. These Frequently Asked Questions explain more.

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Q Is MarbleBase composed entirely of waste and recycled materials?

A Almost entirely. Calcium carbonate ($CaCO_3$) makes up 80% of the facestock, sourced from the waste left over during marble mining operations in Taiwan and China. The other 20% is largely postconsumer high density polyethylene (HDPE), derived mainly from recycled plastic bottles. A very small quantity of new HDPE is added to the recycled HDPE during manufacture of the material. Note that trials have been attempted using bio-plastic, but these have not yet been successful.

Q How is it disposed of or recycled?

A MarbleBase is made from mining waste - the leftover dust and small rocks are ground up to produce calcium carbonate powder. Since calcium carbonate is already commonly used to make PE films stronger and cheaper (1-5% is typically added), it is already present in the current PE recycling stream. The result is that MarbleBase can be recycled in the usual category 2 plastics (Polyethylene/PE) recycling stream – there have been no indications to date that the material has any adverse effects during sorting or on conventional recycling facilities.

Q Is MarbleBase degradable?

A Yes - the material begins to disintegrate after a 9-14 months of exposure to sunlight (8 hours per day). After around a year of constant exposure, it degrades into a dust with a similar composition to egg shells. The PE content of MarbleBase will remain present, as very small particles. Note that the recommended way to recycle MarbleBase is via the plastic recycling stream.

Q Can MarbleBase be printed as easily as conventional label stock?

A For most applications, the material prints as well as conventional cellulose paper, and converters also benefit from using smaller amounts of ink. Offset and UV Flexo printing are the ideal platforms, - laser printers are not recommended because the material begins to deform at a temperature of 65°C.

Q Are there special measures I need to take for die-cutting MarbleBase

A As MarbleBase is derived from actual stones, die-cutting will cause extra wear of your dies compared with standard paper or film. Increased die wear has been confirmed during trials conducted with an industry partner. We suggest that you consult your die manufacturer for a recommendation.

Q Is MarbleBase waterproof?

A Yes. The material is unaffected by immersion in water, and can even be written on while wet.

Q Is it suitable for outdoor applications?

A MarbleBase is extremely well suited to outdoor use, when compared with paper products. It is water-repellent and is unaffected by rain. It is also flame-retardant. The main limitation is that it must not be exposed to continuous sunlight for long periods of time, unless it is protected against UV.

Q What is the application temperature range?

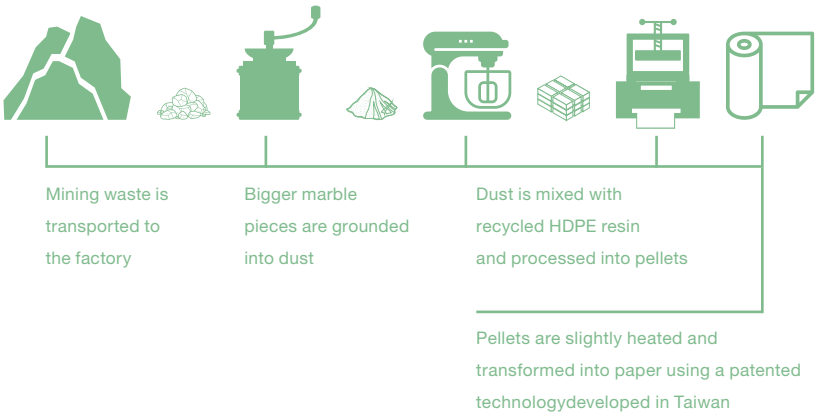
A Temperatures up to 65°C and down to -40°C are no problem. Above 65°C, the material starts to deform.

Q Does MarbleBase 'yellow' with age?

A Even though it is made without bleach, MarbleBase remains pure white over time. As noted above, exposure to sunlight over a period of months will degrade its appearance.

Q How is MarbleBase made?

A The image below shows how mining waste is transformed into paper using a patented technology developed in Taiwan. The process involves grinding waste marble and creating marble/HDPE pellets, which are then heated to create paper.



Q And how does its sustainability compare with recycled papers?

A MarbleBase is more sustainable than recycled papers. Although recycled papers use hardly any fresh fibre, they do require a lot of water, bleach and other chemicals. They also generate even more waste than the production of virgin-fibre paper, and the appearance of recycled paper also means it is not suitable for many applications. MarbleBase does not require toxic chemicals during manufacture. It uses less water and no new fibre, and it suits a broad range of applications. An independent report from KIWA shows that MarbleBase offers a 67% smaller footprint and 82% less energy use compared with pulp paper, and it uses no water or toxic chemicals

Q Does the material qualify as 'tree-free'?

A Yes. Although MarbleBase can be used in many of the same applications as conventional paper, it contains no cellulose and is tree-free. It also consumes far less energy than the production of conventional paper from pulp, and no water.

Q Pulp Paper can be recycled 7 times. Wouldn't it be better to use pulp paper?

A No, because beside the benefits we mentioned, each recycling process has a considerable harmful impact on the environment. MarbleBase avoids the footprint, energy use, water use, and chemical use involved in recycling pulp papers.

For more information on technical performance and printing recommendations, please refer to the respective datasheets. Please note that the Avery Dennison product range and service offering can be subject to changes. For an accurate overview, please check our website **label.averydennison.eu** or contact your local Avery Dennison sales representative.