



Frequently Asked Questions

I've always heard that plastic recyclers needed caps to be taken off? Why make the change?

Two key reasons: First, when recycling gets easier, participation goes up. APR is dedicated to boosting participation in recycling programs. Second, the cap material is recyclable. Why dispose something that could be recycled? In the past the plastics recycling industry was not able to effectively recycle bottles with caps on so the message to remove the cap was created. Recycling collection and processing technology has improved, demand for the recyclable material has increased allowing the current caps on recycling message and process.

Are recycled caps marketable?

Yes. Generally, caps are made out of high density polyethylene (HDPE) and polypropylene (PP) – both of these have high demand from applications in both domestic and export markets.

Caps are usually made of a different type of plastic than bottles. Do they have to be recycled separately?

No. Although closures may be made of a different material than the bottle, bottles are ground into flake before being vigorously washed in the recycling process. The washed cap material is then separated from the bottle material during a water bath float/sink process. PET will sink, PP and HDPE will float. Both materials are then recycled into new items.

Should bottles and containers be flattened before replacing the cap?

APR's primary message is EMPTY AND REPLACE CAP. According to a recent [MRF Material Flow Study](#), flattening bottles can lead to improper sortation, and they may end up in the paper stream. Retaining a 3D form can help containers be successfully sorted.

Can bales of bottles with caps on be marketed at the same rate as bales without caps?

Yes. APR's model bale specifications do not downgrade for the inclusion of caps. APR member companies regularly buy and recycle bales of caps-on bottles and containers.

Can I get a good bale compaction rate with caps on bottles?

Yes. Good bale density is important – too light and it's hard to hit load requirements. Too tight and the material is over compacted, and recyclers cannot break them apart very well. While the answer varies by the type of baler, generally speaking 100-120psi of pressure should allow most balers to compress plastic bottles with caps on. Large-scale 2 ram systems, most commonly used in MRFs, should have no trouble as they often range in the 150-300+ psi range. A single ram, closed door baler usually operates at 70-120 psi. While larger balers of this format should be fine, those running at the low end of that range will generally have trouble securing a good bale. A single ram extrusion auto tie also needs to operate more at 100-120psi range but there's some finesse needed. By running a load of cardboard before the bottles, the operator then gains something hard to push against and should be able to reach compaction.

Must the bottles go through a perforator machine before baling in order to get a good compaction rate?

Generally, no. Most current Material Recovery Facilities (MRF) do not operate a perforation machine to puncture the bottles before baling. Heavy duty horizontal balers take care of the job using plenty of pressure.

Will the caps shoot off during baling?

APR strongly suggests all baler safety equipment such as guards be left untampered, unmodified, and unchanged to prevent incidents and accidents. Rupturing bottles in a baler can create projectiles and baler manufacturers have included the guards for worker protection.

Are there things I can do to design my products to make them more recyclable?

Yes. [The APR Design® Guide for Plastics Recyclability](#) is the most comprehensive design resource outlining the plastics recycling industry's recommendations in the marketplace today with the ultimate goal of all plastic packaging to be compatible with the plastics recycling infrastructure. Size and shape are critical parameters in MRF sorting, and this must be considered in designing packages

for recycling. Items smaller than three inches in all dimensions are non-recyclable per APR. Most caps are smaller than three inches. If they are not replaced on bottles, they will not be recycled, and end up in the landfill.

Are metal caps really a problem?

Yes. Steel caps damage machinery and aluminum caps slow down production and are too contaminated to recycle. They may cause contamination issues in the float/sink process, as they sink with PET material. Metal caps may also cause plastic bottles and containers to be separated from the plastics stream in the eddy current (magnetic) step of the sortation process at the MRF.

My MRF says that they do not accept caps on plastic containers. What should I do?

Please let them know that APR supports caps and closures to remain on containers before being placed in a recycling cart or bin. We understand that for some MRF's accepting caps on is readily done and for some it is a challenge. Our message is that the market accepts bales for which the caps and closures are left on the bottles, but the equipment and policies at the local level may take time to adapt. Please feel free to share this information or direct your MRF officials to: www.plasticsrecycling.org.