

Polypropylene vs PVC

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Polypropylene (PP) is one of the most neutral plastics containing only two elements: carbon (C) and hydrogen (H). PVC (polyvinyl chloride) plastic, commonly referred to as vinyl, is one of the most hazardous consumer products ever created.

PRODUCTION

Importantly, the manufacturing of materials often causes the greatest environmental burden. PP sheet is manufactured from propylene monomer, a relatively safe gas which is a waste by-product of the petroleum industry. It used to be burned off into the atmosphere, contributing to greenhouse gas emissions. Therefore, using more PP in products may help to reduce greenhouse gas emissions. PP is made up from carbon and hydrogen and is manufactured without any dangerous emissions. PVC is manufactured with the addition of a plethora of toxic additives, which can make the PVC product itself harmful to consumers. These chemicals can evaporate or leach out of PVC, posing environmental and irreversible life-long health risks to consumers.

LIFE CYCLE

PVC's entire life cycle, from production through use and disposal, has a negative impact on human health and our environment. Not only is PVC inherently dangerous in its basic form, but it also needs a large amount of heavy metals such as lead to stabilise it. Lead is highly toxic both during the life cycle of a product and after its disposal. There is no lead nor other heavy metals used in the manufacture of Promeg PP sheet. A further problem with flexible PVC is that flexibility and softness must be induced by the addition of a large amount of plasticiser, usually phthalates, at concentrations of 30-50%. These phthalates may have carcinogenic properties in humans. They do this by mimicking the female hormone oestrogen, causing biological imbalances in humans and other species. These plasticisers are mobile by nature and hence migratory.

RECYCLE

PP is 100% recyclable. During recycling, PP retains its strength and need not be 'down cycled' into only low impact strength items such as flower pots. Not only are PVC products very difficult to recycle, they are far more toxic in production, use and disposal than PP and for that reason, many communities and businesses are phasing out their use. When disposed of in landfill, PVC poses significant long-term environmental threats as chemical additives can leach into groundwater. PVC cannot be effectively recycled due to many different toxic additives used to soften or stabilise PVC, which can contaminate the recycling batch. In fact, just one PVC bottle can contaminate a recycling load of 100,000 PET bottles!

BY-PRODUCTS

During a fire situation, Promeg polypropylene burns to relatively harmless end products. It gives carbon dioxide and water as the main products, together with carbon monoxide and carbon (soot). When burned PVC plastic releases dioxins, a group of the most potent synthetic chemicals ever tested, which can cause cancer and harm the immune and reproductive systems.

SAFER ALTERNATIVE

It is important that a material uses a minimal amount of natural resources, that it does not emit polluting substances, that it fulfills a long working life and optimises aspects of reuse and recycling. PP fits this criteria. The good news is that a safer, non-toxic, cost-effective alternative to PVC is readily available for virtually every use... Promeg.

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