



## Recycling Guidelines

### ARPRO<sup>®</sup> Expanded Polypropylene (EPP)

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ARPRO<sup>®</sup> Expanded Polypropylene (EPP):

#### PIA<sup>1</sup> Symbol



#### SAE Symbol

>PP<

#### ISO Symbol

>PP-E<

Notes: PIA = Plastics Industry Association (<sup>1</sup>formerly SPI). PIA Symbols from PIA Guideline for Resin Identification Codes.  
SAE = Society of Automotive Engineers. SAE Symbols per SAE J1344.  
ISO = International Standards Organization. ISO Symbols per ISO-1043.

## RECOVERY AND DISPOSAL OF ARPRO<sup>®</sup> EXPANDED POLYPROPYLENE

Due to the increased use of Polyolefin plastics like ARPRO<sup>®</sup> EPP and because of increased environmental and sustainability awareness, particularly regarding packaging, automotive, and other waste legislation, much attention today is paid to reuse, recovery and disposal of these materials.

JSP encourages the reuse, recycling, or safe recovery of all waste. Polyolefins (such as ARPRO<sup>®</sup> EPP which is Polypropylene based) are used in many different products with varying demand of durability which makes it possible for them to maintain their mechanical properties for many years to come, so it takes many years for these to degrade in the natural environment.

For disposition of both ARPRO<sup>®</sup> EPP Post-Industrial Recyclate (PIR) which includes in-plant and post-processing scrap and ARPRO<sup>®</sup> EPP Post-Consumer Recyclate (PCR) which includes end-of-life products, JSP recommends the following options:

### MATERIAL RECYCLING

Recycling is an increasingly attractive waste handling method. All ARPRO<sup>®</sup> EPP products can be recycled and reused. After the ARPRO<sup>®</sup> EPP is collected, it can be shredded and reused (remolded) which is referred to as Re grind. The quality of the Re grind material depends on the condition of the product, and will vary depending on the processing equipment used. ARPRO<sup>®</sup> EPP can also be collected, shredded and re-extruded (re-melted) and taken back to the base PP resin for reuse which is referred to as Re pro. The Re pro material can be sold as recycled PP material or can be blended with





virgin PP material to produce new ARPRO® EPP material. Contact JSP for information on ARPRO® EPP recycling collection locations in North America.

## **ENERGY RECOVERY**

Incineration with energy recovery is a very effective way of handling PIR or PCR ARPRO® EPP scrap not suitable for material recycling. Total combustion of Polyolefin materials like ARPRO® EPP will generate only water vapor and carbon dioxide. Polyolefin materials like ARPRO® EPP have high heat content. The base PP resin in ARPRO® EPP has a lower heating value of 44.0 MJ/kg (18,900 BTU/lb) [for comparison the lower heating value for light fuel oil is 42.5 MJ/kg (18,300 BTU/lb)]. Polyolefins such as ARPRO® EPP can be used very effectively as a fuel substitute in solid fuel furnaces; a.k.a. 'co-combustion' furnaces. Consult your local municipality as to the availability of program for scrap plastic collection for incineration.

## **LANDFILL**

Landfilling of plastics waste together with other waste is an increasingly restricted solution for many municipalities in North America and vary by location. Since polyolefins like ARPRO® EPP are very stable, they will remain undegraded for long periods of time. Due to the inert nature of ARPRO® EPP, no hazardous leaching residues will be formed. However, JSP discourages the use of landfilling plastics like ARPRO® EPP as they are too valuable to end up as landfill. It should be noted that while local ordinances vary, national and state level legislations and industry standards are increasingly moving to limit or ban the practice of landfilling plastics. Recycling, Incineration (including co-combustion) for energy recovery is preferred and recommended. Consult your local municipality as to the availability and limitations on landfilling plastics waste.

*For more information on ARPRO EPP material composition, consult the specific ARPRO EPP Technical Datasheet (TDS) and/or the ARPRO EPP Safety Datasheet (SDS).*

