Report on Polymer Identification Codes for Packaging

Background

The European Packaging and Packaging Waste Directive 94/62 sets out targets for the recovery of used packaging. With the aim of supporting the achievement of the targets, Article 8 'Marking and Identification' states that

"packaging shall bear the appropriate marking either on the packaging itself or on the label"

and Article 13 'Information for users of packaging' states

"Member States shall take measures …to ensure that users of packaging, including in particular customers, obtain the necessary information about
…the meaning of markings on packaging existing on the market…"

The subsequent Commission Decision 97/129/EC on identification systems details in the Annexes the numbers and abbreviations for the packaging material identification and in Article 3 states that "*Their use shall be voluntary…."*

APME supports the voluntary use of material identification codes where they effectively assist those recovery systems best suited for the used packaging in the place where the packaging becomes waste.

Considerations

Packaging and packed products are traded on a global basis. It is important that where ever possible any identification symbol and system is used, it should be consistent and universally understood.

Communication and education, particularly at the 'final' consumer level, is recognised as being difficult and any identification system should build on existing and proven systems. This is recognised in the CEN report WI 261 070. See Annex 1

In 1988, the USA Society of the Plastic Industry developed a resin identification code for rigid packaging which has become mandatory in many US States, has been adopted in Canada, Japan and Australia and also endorsed by many organisations across Europe for the identification of plastic packaging materials. Its use has been extended beyond rigid plastic packaging.

The optimum collection and optimum recovery option for used packaging will vary depending on the packaging type, materials of construction and also the location where the packaging completes its intended functional purpose. Any material code therefore can only be for material identification, and must not become a claim for recovery.

Also the identification system should not impede the establishment and operation of the most appropriate waste management option: for example, the marking of otherwise "clean" material that can be effectively recycled into higher specification materials and applications.

The selection of a polymer for a particular application is determined by functional requirements and economics associated with packaging minimisation. The development of polymers will continue to support these technical and environmental objectives. Any identification system should not inhibit such technical developments.

Furthermore, the marking system should be flexible enough to accommodate appropriate changes in the future.

It must be noted that the polymers and operators in the automotive and the electrical/electronic sectors are largely different to those of the packaging industry. The marking of plastic materials in these sectors is covered in International Standards ISO 11469 and ISO 1043 parts 1, 2 and 3. These markings are not to be used on plastics packaging, nor are the SPI markings to be used on plastic components in the electrical/electronic or automotive sectors.

APME Position

APME has published a Position Paper setting out the key issues associated with the identification of plastic materials in packaging. The following notes provide background to that position paper and detail the symbols when marking of plastic packaging is to be undertaken.

The plastic identification and symbol detailed in Annex 2 should be used when it is considered to aid the identification and sorting of used plastic packaging.

The identification should be based on the widely established SPI code for resin identification

The marking is expressly intended for identification purposes only. It may not be used to make recycling or other recovery claims.

In the SPI system, the main polymers found in packaging have been allocated the number sequence 1 to 6. Any addition to the system must be undertaken on an international/globally agreed basis in keeping with the objective of maintaining a universally recognised approach.

Polymer developments may yield materials which are based upon any one of the polymers currently allocated 1 to 6. Where that developed polymer can be introduced without limitations into the recovery/recycling systems of a currently classified polymer, packaging made from the developed polymer may be justifiably marked with the identification number of that classified polymer.

Annex 1

The CEN draft report issued under reference WI 261 070 makes the following statement: ***The Commission Decision sets out numbers and abbreviations for packaging materials. With the exception of those for plastics, these have not been in use previously and their widespread use or comprehension by end–users is hard to envisage. Specific sectors of the packaging industry have already developed similar identification systems including symbols which have widespread recognition. In previous work CEN has proposed the continuing use of these symbols and will continue to advocate their use for material identification purposes alongside the system given in the Decision***	**Aluminium**	
	Steel	
	Glass	**Specific material identification is not required**
	Paper Board	**Specific material Identification is not required**
	Plastic	
	Composites	**To be linked to the dominant material**

It should be noted that the Commission has yet to finally agree the definition of "Composite" packaging. In principle it refers to the use of two or more different materials in the packaging, the different materials being plastic, paper, metals, wood, textiles and glass.

The following provides some examples of composites including a plastic component:

Plastic coated paper	moisture resistant board cooking trays for ready meals medical packaging
Paper/foil/plastic	high barrier liquid packaging – drink cartons
Plastic 'coated' glass	sleeved bottles for labelling (normally separable) impact resistant bottles
Metalised Films	High barrier (gas/moisture and light) and presentation

Note: Packaging which comprises different types of plastic is not, and should not be, classified as composite. Within the legislation, plastics are one type of material.

Where different plastics are used together, identification must be carefully considered. The objective of the voluntary identification is to aid recovery. If the combined plastics can be introduced without limitations into the recovery/recycling system of a currently classified polymer, then the combined plastics can be justifiably marked with the identification number of that classified polymer.

Annex 2

Polymer type	CEN Recommendation CEN WI 261 070	EU Commission Decision 97/129/EC	APME Proposal
Polyethylene terephthalate	01 PET	1 PET	1 PET
High density polyethylene	02 PE-HD	2 HDPE	2 HDPE
Polyvinyl chloride	03 PVC	3 PVC	3 PVC
Low density polyethylene	04 PE-LD	4 LDPE	4 LDPE
Polypropylene	05 PP	5 PP	5 PP
Polystyrene	06 PS	6 PS	6 PS
Un allocated references	07 – 20	7 – 19	7 - 19 Number set inside Acronym below

Ref: apme identification Report 0114