

# M O D E R N P L A S T I C S

I N T E R N A T I O N A L

## **AUTOMOTIVE**

**Processors consolidate,  
vehicles lose weight**

***Machine makers  
shorten lead times***

***Recycling lines  
improve throughput***

***Show reports from  
Asia and Europe***

# MATERIALS

(MD) of 230 MPa at 30 micron gage. Melt flow index is put at 0.95 g/10 min. *Mitsubishi Petrochemical, Plastics Division, 2-5-2 Marunouchi, Chiyoda-ku, Tokyo 100, Japan* ◀275▶

**THERMOPLASTIC ELASTOMER** is block copolymer of polystyrene and vinyl-isoprene. Highly compatible with polyolefins and styrenics, Hybrar can be compounded with these resins, or minerals such as mica and ferrite, for use in applications in which

absorbing properties are required. VS-1 grade has a glass transition temperature of 8°C, an MFI of 15 g/10 min at 170°C and 1 MPa, modulus of 2.2 MPa, and elongation at break of 690%. Sample grade VS-3 has glass transition temperature of -17°C, MFI of 14 g/10 min, modulus of 2.2 MPa, and elongation at break of 860%. Sample grade HVS-3 has glass transition temperature of -19°C, MFI of 0.6 g/10 min (5 g/10 min at 200°C), modulus of 2.1 MPa, and elongation at break of

890%. *Kuraray Co., Isoprene Chemicals Dept., 2-9-1, Hatchobori, Chuo-ku, Tokyo 104, Japan* ◀276▶

**PA/PO BLOW MOLDING ALLOYS.** Flexible grades of Elf Atochem's Orgalloy nylon/polyolefin alloys, LT4060, LT5050, and LT6040, have minimum service temperature of down to -40°C – the first grade shows “no break” in notched Charpy impact tests at this temperature, while the stiffest grade, LT6040, has a value of 30 kJ/m<sup>2</sup>. Maximum service temperature is +150°C for all grades. Flexural modulus ranges from around 300 MPa (LT4060) to 550 MPa (LT6040). Grades are suitable for under-hood parts like air intake ducts, as well as tubing, and seals. Matt finish, soft feel, and good chemical resistance make them suitable for small cosmetics bottles. Supplier says all Orgalloys have good processability, low moisture absorption, and high barrier against oxygen and hydrocarbons. *Elf Atochem, La Défense 10, Cédex 42, F-92091 Paris la Défense, France* ◀277▶

**PLATT'S**

## GLOBAL PRICING AUDIT

COMPILED BY AIMEE BLYTHE  
PLATT'S POLYMERSCAN

### LOW-DENSITY POLYETHYLENE

After achieving higher prices – around 1.20-1.25 DM/kg – in the second quarter, European LDPE producers found that as the summer lull began, demand tumbled taking prices with it. Processors have begun purchasing on a hand-to-mouth basis and although producers cut production in an attempt to balance market fundamentals, supply continues to outweigh demand. However, most players agree that prices are rising and are watching to see where levels settle. Currently prices are at 1.12-1.20 DM/kg with suppliers said to be targeting 1.25 DM/kg as a minimum level for October.

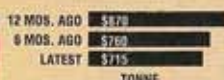
U.S. suppliers continue to have difficulty competing in the export market due to ample supply and attractive pricing from other sources. Producers, unsuccessful in their attempt to raise domestic prices last spring, have nominated a \$0.04/lb increase for September 1. Most processors are said to have price protection until October. Suppliers are hopeful that steady ethylene prices and an increase in LDPE prices will boost their margins.

Asian prices, which were seen as stable around mid-year, came lower on the back of reduced Chinese purchases, at first due to the weaker Yuan in relation to the U.S. dollar and later due to a tightening of credit in China. In August, cheaper European imports began to put pressure on the market and in September, Korean material was offered at around \$50/tonne below market price, which players say may force prices down to a level of around \$580/tonne.

### ADDITIVES

**MINERAL** is said to cut chloride emissions substantially when PVC is incinerated or catches fire. “Calfa” filler is a porous mineral (pore diameter 100 nm) containing silicon, sodium, potassium, calcium, and aluminum, that acts to absorb chlorine. Compounding 1% by weight with PVC results in a 40% decrease in hydrogen chloride emissions upon incineration, while compounding 4% by weight cuts emissions by over 60% and up to 75% in some cases, says the company. The filler also cuts carbon monoxide and dioxide emissions by around 15% in a 1% loading. As Calfa also acts as a heat stabilizer and can be substituted for conventional heat stabilizers in a 1:1 ratio, no additional costs are incurred when using the filler, says supplier. It notes that conventional heat stabilizers are priced around the

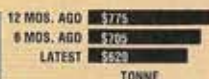
#### GERMANY



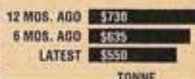
#### EUROPEAN EXPORT



#### FAR EAST ASIA



#### U.S. EXPORT



Prices listed are median spot trading prices for injection molding low-density polyethylene as of Sept 9, 1992, April 7, 1993, and Sept 8, 1993, converted into U.S. dollars at the five-day exchange rate as of Sept 10, 1993.

Source: Platt's PolymerScan (London), Tel: +44 (081) 545-6123, Fax: +44 (081) 545-6172

# MATERIALS

same level as the 700-800 yen/kg price for Calfa. The filler has passed France's stringent PL standard that covers materials used in food packaging, although this is not the main market being targeted. PVC flooring, panels, and other construction materials are seen as the main end use for Calfa compounds. PVC compounds containing Calfa are also recyclable. *Calfa Chemical Co., 1-19-6, Tsurumichuo, Tsurumi-ku, Yokohama, Japan* ◀278▶

**SILICA-FREE CONCENTRATES.** Second generation Atmer concentrates from ICI Surfactants are for use in various types of thin film, and also extruded polyethylene foam. Concentrate technology is currently used for antistats, antifogs, slip agents, and UV stabilizers. Unlike first generation grades, which continue to be produced, the new grades contain no silica, previously used as an additive absorbent. As a result, they improve clarity, and increase slip less; cell regulating grades for PE foam are more effective, too. The concentrates are similar to masterbatches, but the additive concentration is much higher, at 40-50%, compared with around 10%. Price per unit amount of active additive is around 60%. *ICI Surfactants, Everslaan 45, B-3078 Everberg, Belgium* ◀279▶

## ADHESIVES

**HOT PERFORMER.** Air Products says its Amicure PACM curing agent improves the high-temperature performance of two-component heat-cured epoxy adhesives for bonding metals or plastics. Partial substitution in place of a standard, high-imidazoline polyamide in typical formulations raises glass transition temperature by over 15°C to 71°C, and can increase lap shear strength by up to 60% at elevated temperatures, it says. In addition, bonds between plastics can be stronger than the plastics themselves (tests were carried out on glass-reinforced polyester). *Air*

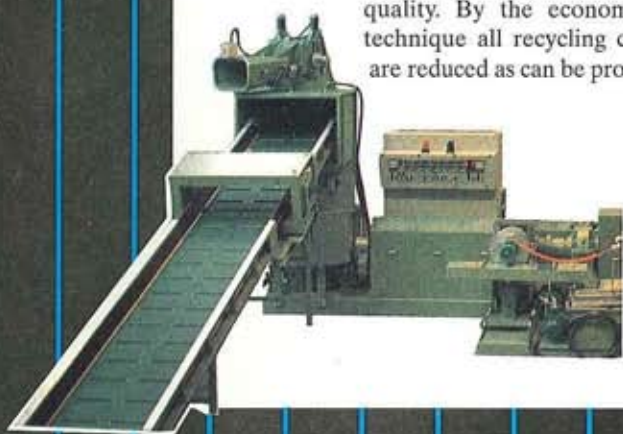
*Products and Chemicals Inc., 7201 Hamilton Boulevard, Allentown, PA 18195-1501, USA* ◀280▶

**FLEXIBLE PARTS BONDED,** for medical and other applications, with new adhesive harden under visible or ultraviolet light. An addition to the company's Luxtrak line for bonding hard parts during assembly, the materials have a cure depth of up to 10 mm with

blue light only, the company says. Viscosities are quoted at 6.9-27.2 Pa · s, Shore A hardness at 55-69, linear shrinkages at 1.44 to 1.87%, and water absorption 0.95 to 3.77% (24h, 100°C). Coefficients of linear expansion ( $\cdot 10^{-6}/K$ , 20 to 90°C) range from 199 to 214, the company says. *Zeneca Specialties, P.O. Box 8, the Heath, Runcorn Cheshire WA7 4QD, England* ◀281▶ ◻

## RM-RECYCLING PLANT FOR PLASTICS WASTE

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