

*Trends in
Automotive Thermoset
Composites Use - May 2007*

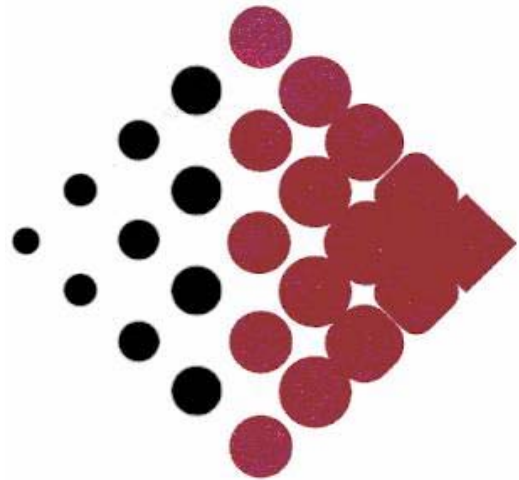
**Good Evening
and Welcome!**



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AUTOMOTIVE COMPOSITES ALLIANCE



Automotive Composites Alliance

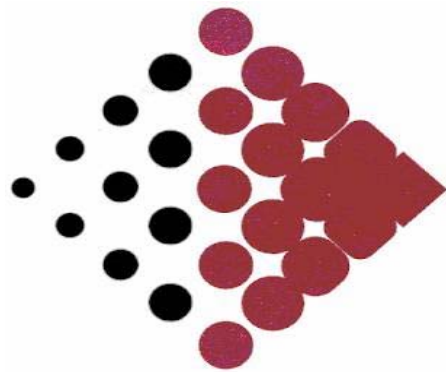
Serving the Car and Truck Industries

a division of



ACA VISION

“To Develop and Grow Thermoset Composite Applications In The Transportation Industry”



**Automotive
Composites
Alliance**

Serving the Car and Truck Industries

ACA MEMBER COMPANIES



Alcan Baltek Corporation

AOC

ASHLAND

Ashland, Inc.



Bayer Material Science



Continental Structural Plastics

Industrial Dielectrics, Inc.



Meridian Automotive Systems



Molded Fiber Glass Companies

Owens Corning



Plasticolors, Inc.

Reichhold, Inc.



Saint Gobain - Vetrotex

ANNUAL ACA EVENTS

- Supplier Preview Days / NAIAS January
- Annual Components List January
- SPE-ACA Composites Night May
- ACCE Conference September
- Golf Outing September
- Technical Articles and Papers Ongoing
- Resources on the Web Ongoing
 - <http://www.acmanet.org/>
- Composites "Road Show" ! Coming Soon !



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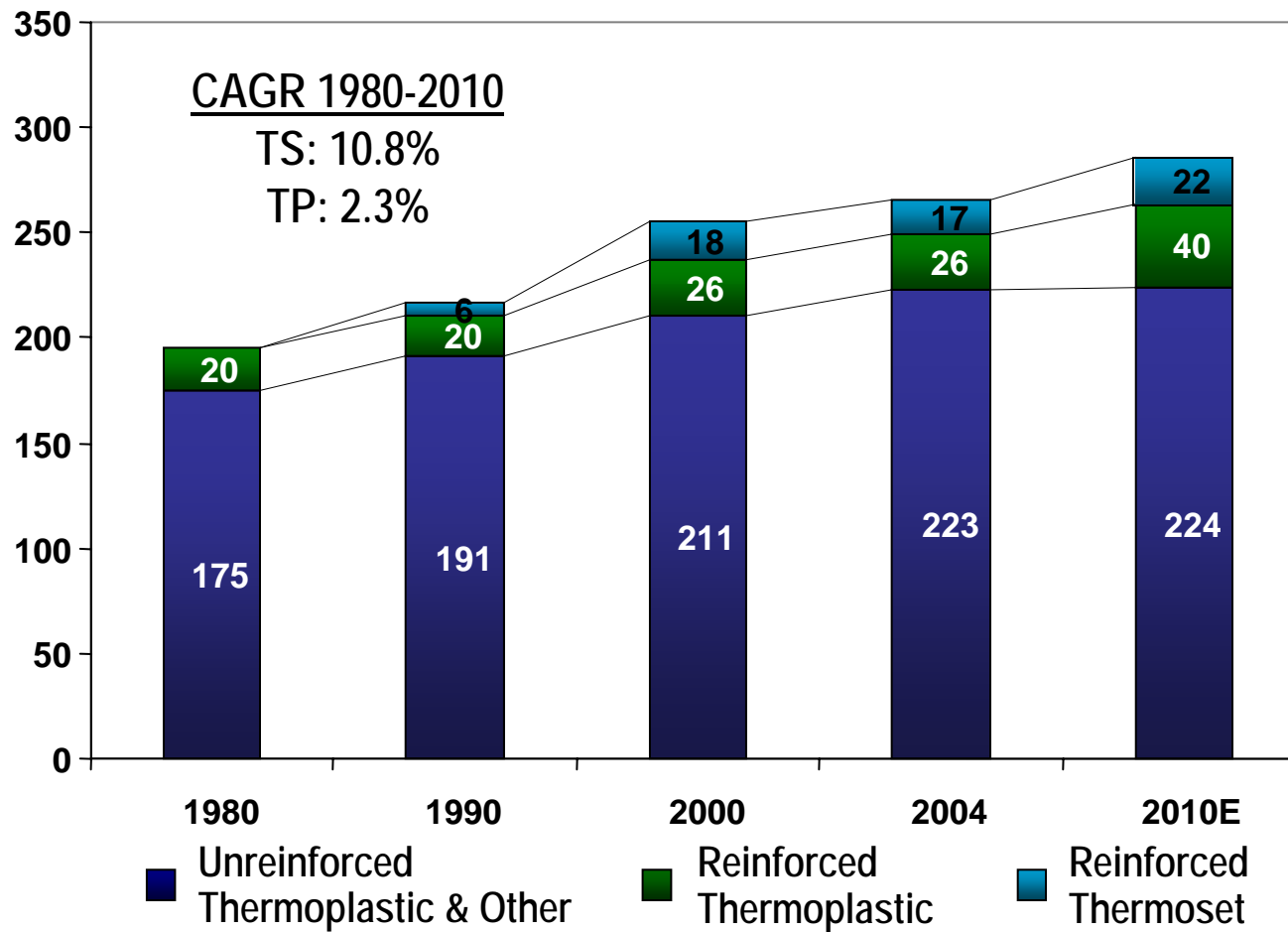


Trends In Thermoset Composites Use



PLASTICS & COMPOSITES USE

“Average” Pounds per Vehicle – North America

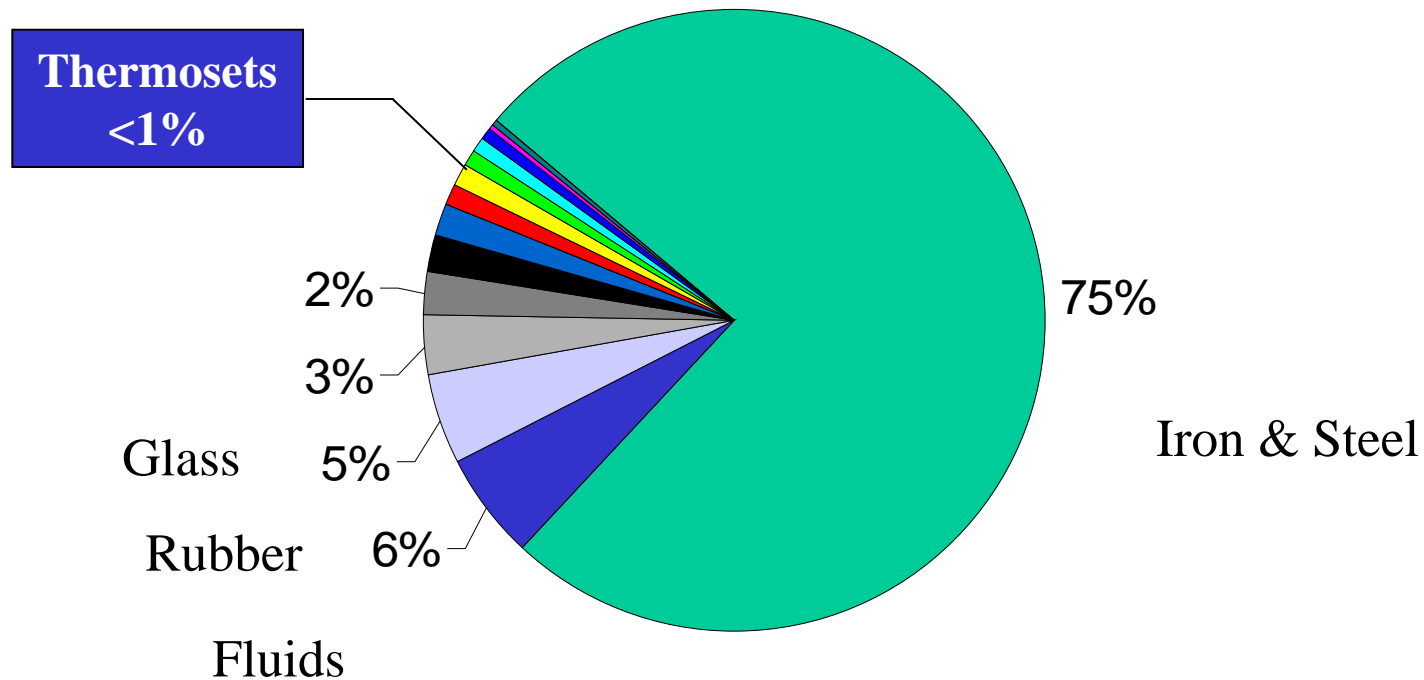


Sources: Market Search, Inc. Automotive Plastics Report; Ashland, Inc.

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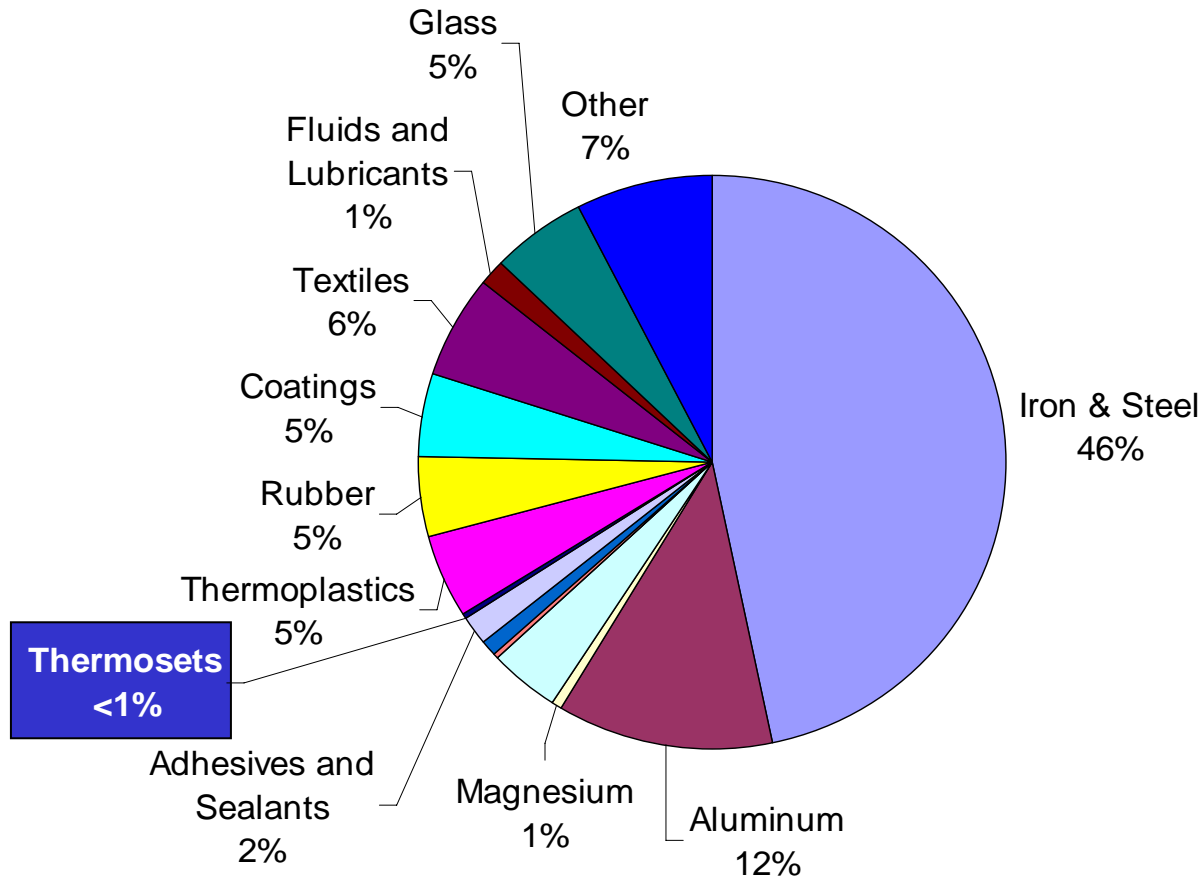
TYPICAL MATERIALS BREAKDOWN

2005 Average Passenger Car Material Content
By Weight (Total = 3,700 lbs.)



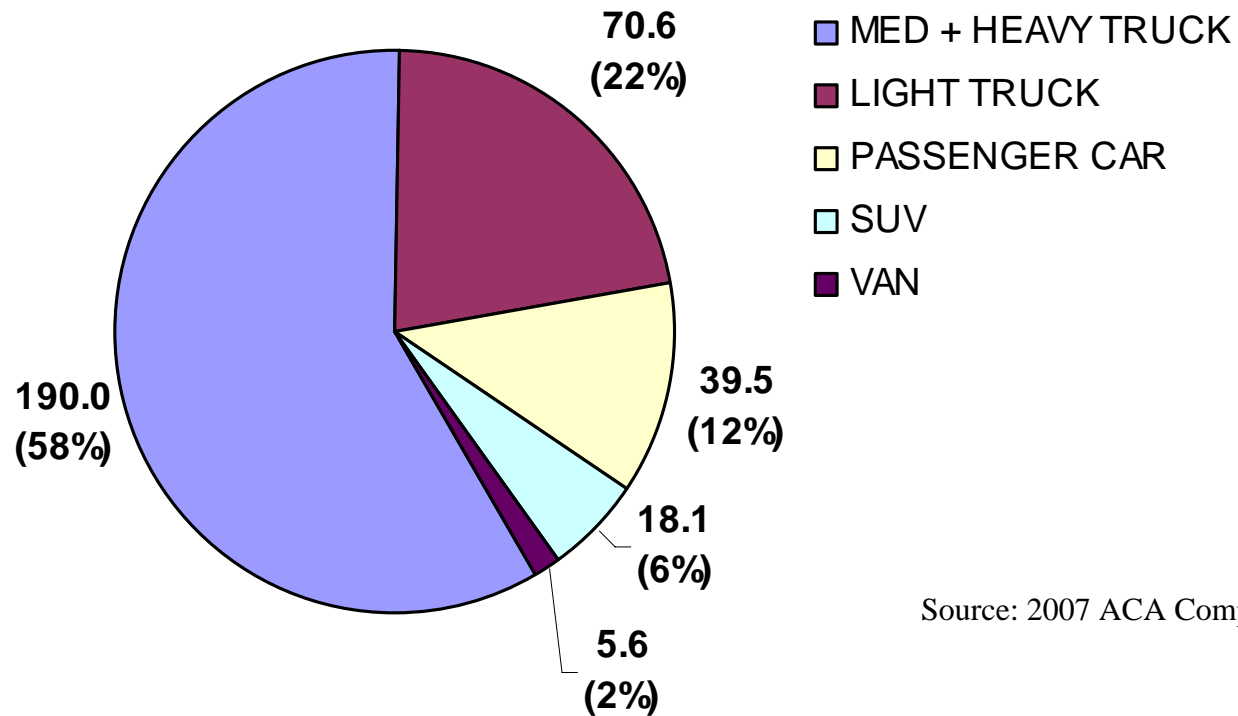
TYPICAL MATERIALS BREAKDOWN

2005 Average Passenger Car Materials Value
Total = US\$6,660



2007 COMPOSITE USE BY SEGMENT

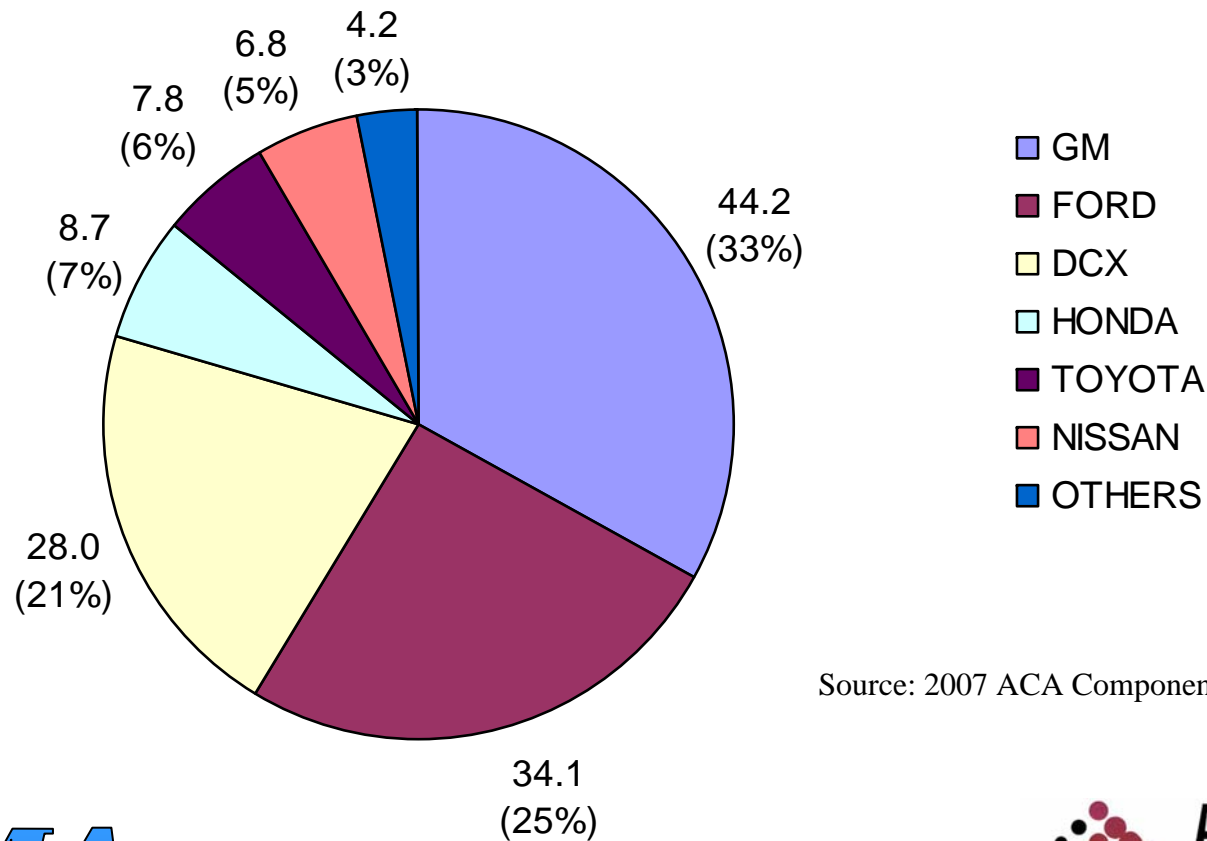
2007 THERMOSET COMPOSITE USE BY VEHICLE SEGMENT - 325 MM Lbs.



Source: 2007 ACA Components List

2007 COMPOSITE USE BY OEM – CAR

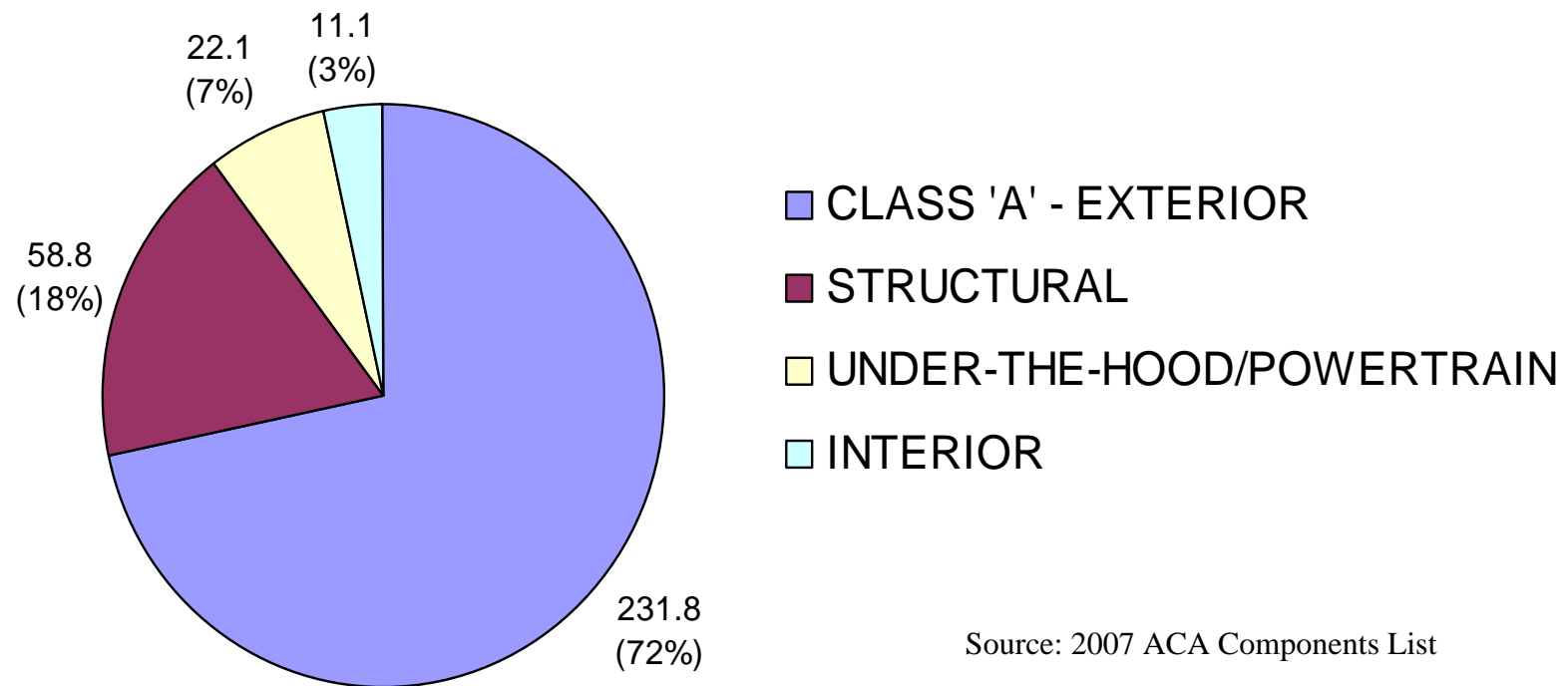
THERMOSET COMPOSITE USE BY OEM LIGHT VEHICLE ONLY - 135 MM LBS.



Source: 2007 ACA Components List

2007 COMPOSITE USE BY APPLICATION

THERMOSET COMPOSITE USE BY APPLICATION TYPE - 325 MM LBS.



Source: 2007 ACA Components List

TOP COMPOSITE APPLICATIONS

	Applications - 2005	MM lbs.
1.	Fenders – RIM & TS	41.3
2.	Headlamp Housings	36.9
3.	Engine Cam Covers	29.6
4.	Hoods	16.8
5.	Pickup Box	16.3

	Applications - 2015	MM lbs.	%CAGR
1.	Pickup Box	96.2	19.4%
2.	Fenders – RIM & TS	88.2	7.9%
3.	Headlamp Housings	49.9	3.1%
4.	Engine Cam Covers	48.1	5.0%
5.	Hoods	47.2	10.9%

*Source: Automotive Plastics Report; Ashland, Inc..

TOP APPLICATION GROWTH DRIVERS

- Hoods/Fenders
 - SMC most economical solution for average build volumes
 - Fenders mostly aesthetic; not required for crashworthiness
 - Lower weight; low density SMC competing w/aluminum
- Pick up Boxes/Rear Compartment/Floorpan
 - Accepted metal replacement material in growth segment
 - Relatively large weight-per-part application: 30 – 40 lbs. savings typical
 - Exceptional design flexibility and cost-effective vs. steel
- Valve Covers
 - Cost-effective vs. metal and engineered thermoplastics at most volumes
 - Improved NVH and temperature management characteristics
 - Increased design/styling flexibility
- Headlamps
 - Proliferation of HID (high intensity discharge) lighting
 - Increased styling flexibility and performance vs. alternatives

SUMMARY COMMENTS

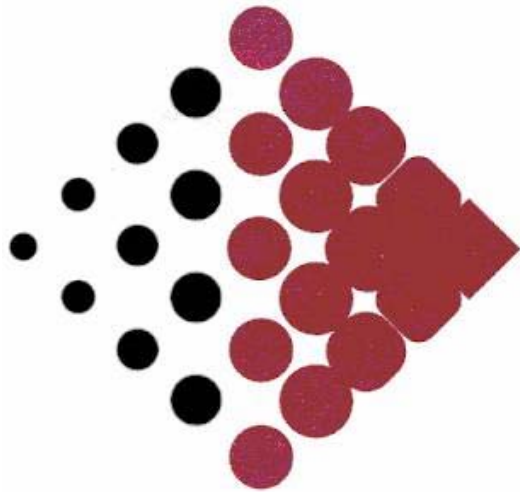
- N. American use of thermosets: Est. 325 MM lbs.
- Thermosets use is relatively small, but growing portion of automotive materials use
- OEM consumption aligned with production volume
- Heavy truck a larger thermoset user by almost 2:1
- Top growth applications delivering exceptional OEM value - performance vs. cost



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Thank You!



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