

# MATERIAL SOLUTIONS FOR PROTECTIVE CASES IN ELECTRONICS



Personal hand held electronic devices like mobile phones, phablets and wireless devices are common accessories in today's Internet of Things' world. As these portable electronic devices become more elegant, sleek and expensive, the need to protect it to preserve its look and value becomes a necessity.

Protective cases and covers come in a variety of designs, forms and functions. Clear transparent or opaque colored plastic are typical materials used for protective cases. If not formulated correctly, these materials may not be able to withstand the abuse of a typical consumer usage.

This paper shares with you the different protective casing design trends and the materials that can be used for different applications.

## DESIGN NEEDS

## COVER TYPE

	Clear (thin wall)	Clear View	View Window	Opaque	Leather
					
 2 <sup>ND</sup> OPERATION		NON- CONDUCTIVE VACUUM METALLIZATION	UV	FILM LAMINATION OR UV	LEATHER BONDING
 MATERIAL SOLUTIONS	LEXAN™ HFD1930	LEXAN EXL1613T	LEXAN EXL1414T	LEXAN ML0991	LEXAN EXL1413T
 HIGH TRANSMITTANCE	**	*	*		*
 LOW HAZE	**	*	*		*
 HIGH NOTCHED IZOD IMPACT		***	**	*	*
 CHEMICAL RESISTANCE		**	*	*	*
 HIGH FLOW	**			*	

# MATERIAL SOLUTIONS FOR PROTECTIVE CASES IN ELECTRONICS

---

## CLEAR

This is the simplest design and form of a protective case. This design can protect the back and sides of the portable device with little protection to the front glass panel. This design is typically basic and lightweight due to the minimal use of material in the cover. The challenge is to be able to produce the cover in very thin-walled sections of less than 1mm while maintaining reasonably good resistance against drop cracking. This can be achieved using LEXAN™ HFD1930 resin. This resin enables very thin walled covers to be produced and can be custom colored from light to dark colors.

## CLEAR VIEW

This design provides a metallic look on the front cover with a reflective mirror while allowing visibility of the display. This is achieved using a secondary process called Non-Conductive Vacuum Metallization (NCVM). LEXAN EXL1613T is designed to survive this stringent NCVM process and provide the best level of chemical resistance and impact performance for transparent protective cases.

## VIEW WINDOW

This design provides cover protection on both the front and back of the portable device. The front cover has a clear transparent window to enable consumers to view the time or other critical information on the screen. This design typically requires a good balance of impact resistance and chemical resistance against typical chemicals found on human hands and face such as hand cream, sunscreen and facial lotion. LEXAN EXL1414T can provide this good balance of protection and good surface aesthetics.

## OPAQUE

This design is similar to clear covers except the transparency is compromised for an opaque colored design or with design prints on the back to satisfy the consumer's aesthetic preference. The need for printing or lamination requires a material with improved chemical resistance and UV resistance. For this purpose, the LEXAN ML0991 is the material of choice.

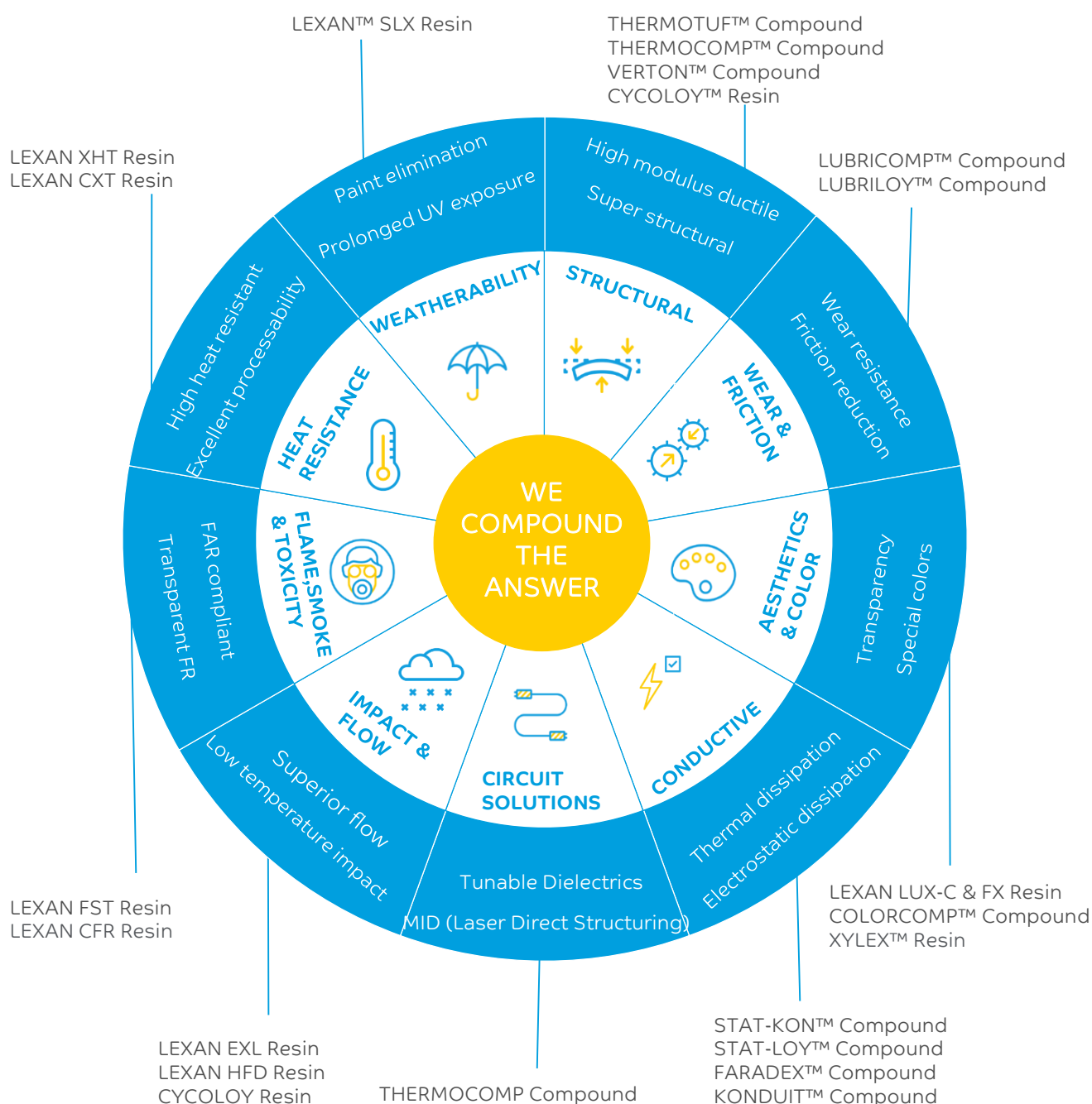
## LEATHER

This design provides a more classy leather feel and look and the protective case is bonded to leather. The bonding is done by adhesive and as a result, a material with good chemical resistance is preferred. LEXAN EXL1413T will provide a good solution for this design requirement.

SABIC Specialty Resins can address each of the above design needs to help customers speed up their process of commercialization of protective cases for portable electronics.

# SPECIALTY COMPOUNDS & LEXAN™ COPOLYMER RESINS

Over 50 years of innovation in thermoplastic compounding enables SABIC's specialty compounds to offer extensive materials with a broad portfolio.



DISCLAIMER: THE MATERIALS, PRODUCTS AND SERVICES OF SAUDI BASIC INDUSTRIES CORPORATION (SABIC) OR ITS SUBSIDIARIES OR AFFILIATES ("SELLER") ARE SOLD SUBJECT TO SELLER'S STANDARD CONDITIONS OF SALE, WHICH ARE AVAILABLE UPON REQUEST. INFORMATION AND RECOMMENDATIONS CONTAINED IN THIS DOCUMENT ARE GIVEN IN GOOD FAITH. HOWEVER, SELLER MAKES NO EXPRESS OR IMPLIED REPRESENTATION, WARRANTY OR GUARANTEE (I) THAT ANY RESULTS DESCRIBED IN THIS DOCUMENT WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (II) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN OR APPLICATION INCORPORATING SELLER'S MATERIALS, PRODUCTS, SERVICES OR RECOMMENDATIONS. UNLESS OTHERWISE PROVIDED IN SELLER'S STANDARD CONDITIONS OF SALE, SELLER SHALL NOT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS, SERVICES OR RECOMMENDATIONS DESCRIBED IN THIS DOCUMENT. Each user is responsible for making its own determination as to the suitability of Seller's materials, products, services or recommendations for the user's particular use through appropriate end-use and other testing and analysis. Nothing in any document or oral statement shall be deemed to alter or waive any provision of Seller's Standard Conditions of Sale or this Disclaimer, unless it is specifically agreed to in a writing signed by Seller. Statements by Seller concerning a possible use of any material, product, service or design do not, are not intended to, and should not be construed to grant any license under any patent or other intellectual property right of Seller or as a recommendation for the use of any material, product, service or design in a manner that infringes any patent or other intellectual property right.

SABIC and brands marked with™ are trademarks of SABIC or its subsidiaries or affiliates, unless otherwise noted.  
© 2018 Saudi Basic Industries Corporation (SABIC). All Rights Reserved.

Any brands, products or services of other companies referenced in this document are the trademarks, service marks and/or trade names of their respective holders.