KiMFLEX®
Flexible Foam Systems



PERFECT DRIVING COMFORT

KiMPUR

Acoustic & NVH Solutions
for Automotive Industry

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KIMflex® Acoustic & NVH Solutions For Automotive Industry

In today's world, while technological advancements have brought many conveniences, they have also introduced some disadvantages. One of these is noise pollution. In recent years, the significant increase in noise pollution has escalated the need for sound insulation. Soundproofing has become a critical factor in many industries, with the automotive sector being no exception.

For today's consumers, interior noise is a crucial factor in their vehicle selection and brand preference. This has intensified competition among automotive companies and required continuous development of insulation materials.

To achieve effective soundproofing in the automotive sector, flexible soundproofing foams are preferred over other insulation materials due to their open-cell structure, lightweight nature, and ease of application. These foams significantly reduce noise inside the vehicle, offering a more comfortable journey for drivers and passengers.

Kimpur has developed **KIMflex®** Acoustic & NVH Solutions, which provide a comfortable driving experience and journey. Thanks to their open-cell structure, **KIMflex®** Acoustic & NVH Solutions effectively prevent sound waves from spreading uniformly. The foam's cells absorb the energy of sound waves, demonstrating excellent sound absorption properties.



AREAS OF USAGE

- **Vehiclefloor**
- **Peripheral engine components**

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AVANTAJLAR

- High Sound Absorption
- Suitable Skin and Foam Structure
- Flexibility
- Excellent Walking Properties Even in Large Molds
- High Wear Resistance

KIMflex® Acoustic & NVH Solutions	Description	Demoulding Time (sec)
KIMflex FC 049 - Izokim FC 017	-High density sound insulation system -Suitable for large part production	180
KIMflex FC 083 - Izokim FC 017	-Low density sound insulation system -Low VOC feature -Superior performance in fire tests -Suitable for large part production	75

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Graphene Based High Performance KIMflex® Acoustic & NVH Solutions

Light vehicle design has gained major importance in the automotive industry in order to save energy. With composite parts used in new generation vehicles, fuel consumption is reduced by making the vehicle lighter.

Hence, it is known that polyurethane systems, with their lightness feature, provide loss of weight in vehicles and create less emissions with less use of energy. Therefore, polyurethane systems are frequently preferred in the automotive industry, from vehicle seat production to sound insulation.

Graphene, being defined as the miracle material of recent years, has further strengthened this feature of polyurethane foam. Thanks to their lightness, graphene-based polyurethane foams increase the performance of sound insulation without affecting the total weight of the car. As a result of studies performed, it has been determined that graphene-based sound insulation systems provide **up to %65** improvement in sound absorption compared to standard systems.

Compared to standard systems, improvements in the mechanical properties of sound insulation systems obtained with the use of graphene have been observed, and the test results are given in Table 1.

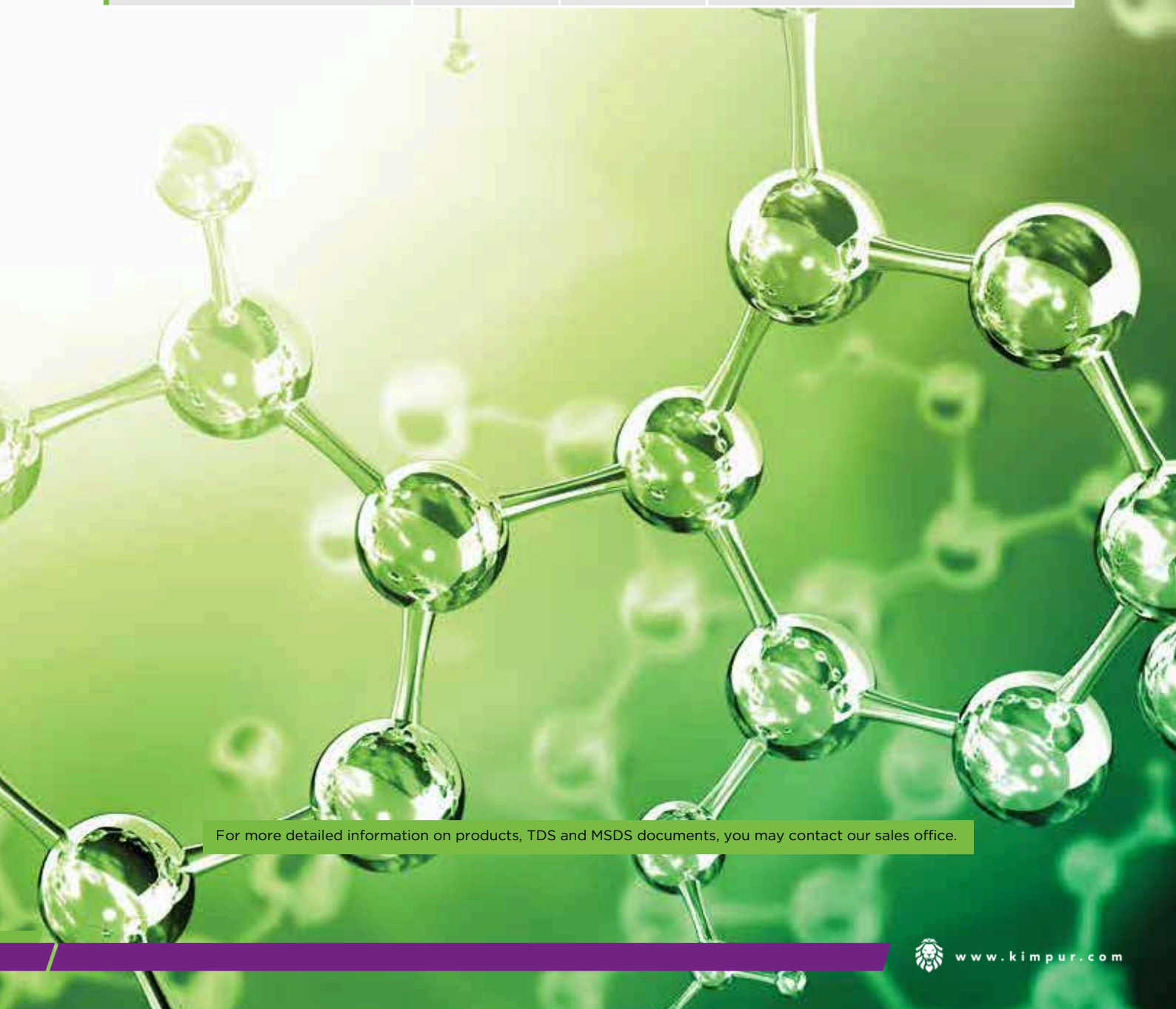
Test	Standard Sound Insulation Systems	Graphene-Based Insulation Systems	Improvement Rate
SAG Factor	3,57	4,42	%23,80
Tear Resistance ($F_{break\ N/cm}$)^2	6,21	7,2	%15,94
Tensile Strength (εR)	180	193,67	%7,59
Compression Set (%)	20	16	%20
% Sound Absorption Coefficient			
*1/3 Octave Band Frequency (Hz)			
500	0,08	0,09	%12,5
630	0,10	0,12	%20
800	0,12	0,16	%33,3
1000	0,17	0,21	%23,5
1250	0,26	0,28	%7,7
1600	0,30	0,39	%30
2000	0,32	0,53	%65,6
2500	0,43	0,71	%65,1
3150	0,60	0,87	%45
4000	0,75	0,93	%24
5000	0,82	0,87	%6,1
6300	0,80	0,80	

Table 1: Comparison of Test Results of Graphene-Based Sound Insulation Systems and Standard Sound Insulation Systems * Tests were performed at an operating ratio of 100/64 and a molded density of 39 kg/m3.

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Applying graphene which is obtained from the recycling of automotive tire wastes, **Kimpur** developed high performance **KIMflex®** HR Foam Systems used in the production of office and automotive seats.

KIMflex® FC	COMPONENTS		KIMflex FC 052 Izokim FC 017
REACTION PROFILE	**UNIT**	**VALUE**	**METHOD**
Mixing Time	sec	5	Kimpur Internal Method
Cream Time	sec	8 ± 1	Kimpur Internal Method
Tack Free Time	sec	40 ± 4	Kimpur Internal Method
Rise Time	sec	60 ± 5	Kimpur Internal Method
Free Rise Density	kg / m^3	38 ± 2	Kimpur Internal Method

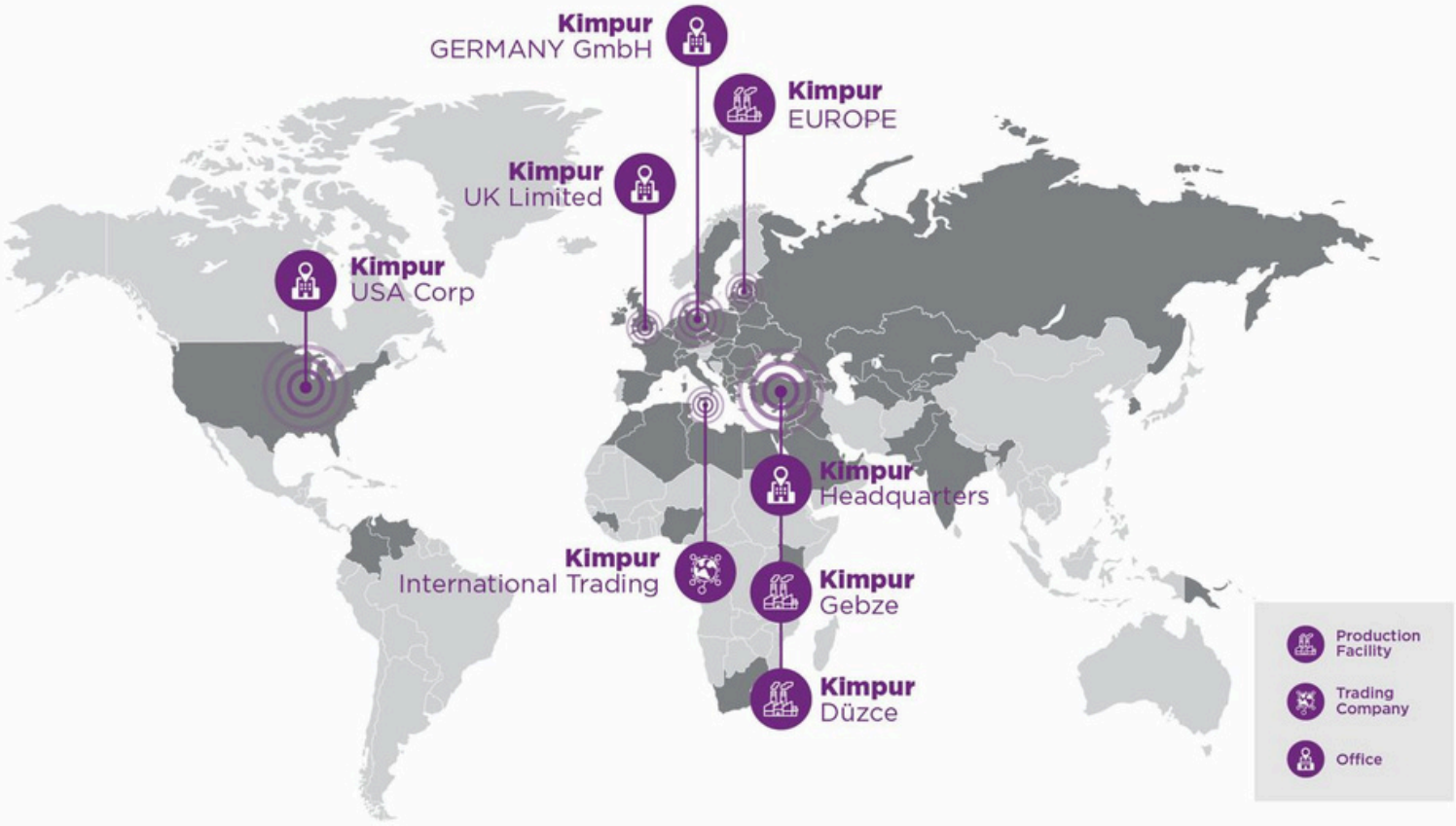


For more detailed information on products, TDS and MSDS documents, you may contact our sales office.

TÜRKİYE'S LARGEST POLYURETHANE SYSTEM HOUSE

Kimpur is the polyurethane system house with the largest capacity in the region, with a production capacity exceeding 200,000 tons. It leads the sector by exporting to more than 60 countries in 5 continents. Polyurethane systems produced; It is used in different sectors such as shoes, automotive, furniture, heating and cooling, insulation-construction and defense industry.

GLOBAL ACTIVITIES



TÜRKİYE'S TOP 500 ISO INDUSTRIAL ENTERPRISES

TOP 1000 EXPORTERS OF TÜRKİYE (TİM: TURKISH EXPORTERS ASSEMBLY)

TÜRKİYE'S LARGEST 500 FORTUNE COMPANIES

İKMİB İstanbul Chemicals And Chemical Products Exporters' Association Stars of Exports

Turkishtime R&D 250 TURKISH COMPANIES WITH THE HIGHEST R&D EXPENSES

REACH COMPLIANCE

United Nations Global Compact

Responsible Care® OUR COMMITMENT TO SUSTAINABILITY

Kimpur Corporate Promotional Film
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KİMPUR

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LEGAL INFORMATION

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