

# ADDITIVES – hexagonal boron-nitride and graphene



PRODUCTNAME	APPLICATIONS	SPECIAL FEATURES
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## 2D hexagonal boron-nitride

B-LEAF 19900		<ul style="list-style-type: none"> <li>- few-layers hexagonal-Boron Nitride (h-BN) in <b>powder form</b></li> <li>- lateral crystal size: approx. 130nm</li> <li>- crystal thickness: &lt;5nm</li> </ul>
B-LEAF 10001	<ul style="list-style-type: none"> <li>- Only few atomic-layer thickness</li> <li>- Very high chemical and thermal stability</li> <li>- High compatibility</li> <li>- Heat-dissipating coatings and films</li> <li>- Electrically insulating coatings and films</li> <li>- Barrier coatings and films</li> <li>- Aging and corrosion protective coatings for different substrates</li> <li>- Anti-abrasion / Anti-wear coatings</li> <li>- Textile finishing</li> <li>- Polymer compounding</li> </ul>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-BN <b>concentrate for aqueous systems</b></li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal boron-nitride</li> <li>- <b>water based dispersion</b> with easier processability and handling compared to Powder</li> <li>- specifically designed to provide functionalities to <b>waterborne systems</b></li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal conductivity, electrical insulation, anti-abrasion</b> and <b>barrier</b> properties</li> </ul>
B-LEAF 10101	<ul style="list-style-type: none"> <li>- Other uses where thermal management and/or substrate protection are required</li> <li>- Low dosage level (typically from 0.5% to 5%)</li> </ul>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-BN <b>concentrate for high to medium polarity systems</b></li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal boron-nitride</li> <li>- <b>dispersed in 1-methoxy-2-propanol</b> with easier processability and handling compared to powder</li> <li>- specifically designed to provide functionalities to <b>medium-high polarity solvent-borne systems</b></li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal conductivity, electrical insulation, anti-abrasion</b> and <b>barrier</b> properties</li> </ul>

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B-LEAF 10201	<ul style="list-style-type: none"> <li>- Only few atomic-layer thickness</li> <li>- Very high chemical and thermal stability</li> <li>- High compatibility</li> <li>- Heat-dissipating coatings and films</li> <li>- Electrically insulating coatings and films</li> <li>- Barrier coatings and films</li> <li>- Aging and corrosion protective coatings for different substrates</li> <li>- Anti-abrasion / Anti-wear coatings</li> <li>- Textile finishing</li> <li>- Polymer compounding</li> <li>- Other uses where thermal management and/or substrate protection are required</li> <li>- Low dosage level (typically from 0.5% to 5%)</li> </ul>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-BN <b>concentrate for medium polarity systems</b></li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal boron-nitride</li> <li>- <b>dispersed in n-butyl acetate</b> with easier processability and handling compared to powder</li> <li>- specifically designed to provide functionalities to <b>medium polarity solvent-borne systems</b></li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal conductivity, electrical insulation, anti-abrasion</b> and <b>barrier</b> properties</li> </ul>
B-LEAF COATING 11001	<ul style="list-style-type: none"> <li>- Low dosage level (typically from 0.5% to 5%)</li> </ul>	<ul style="list-style-type: none"> <li>- <b>anticorrosion paint</b> based on two-dimensional <i>h</i>-BN</li> <li>- <b>acrylic 2K corrosion-inhibiting paint</b></li> <li>- based on mixed single-/few-layer hexagonal boron nitride flakes acting as physical barrier against corrosive species</li> <li>- especially for <b>long-term corrosion protection</b> in humid or corrosive environments</li> <li>- the paint can be applied on <b>metallic and printed circuit board (PCB)</b> substrates</li> <li>- for <b>spray coating, brush</b> and <b>roll painting</b> and <b>doctor blading</b></li> <li>- <b>drying at low temperature:</b> 20°C for 48 h or 60°C for 1 h</li> <li>- <b>very good adhesion</b> to steel, stainless steel, sandblasted steel, zinc-based inorganic primer, galvanized steel, aluminum and aluminum alloys, cast iron and plastics</li> </ul>

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B-LEAF 10301	<ul style="list-style-type: none"> <li>- Only few atomic-layer thickness</li> <li>- Very high chemical and thermal stability</li> <li>- High compatibility</li> <li>- Heat-dissipating coatings and films</li> <li>- Electrically insulating coatings and films</li> <li>- Barrier coatings and films</li> </ul>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-BN <b>concentrate</b> for <b>low polarity systems</b></li> <li>- <b>resin-free and toluene-free</b></li> <li>- based on sterically stabilized few-layer hexagonal boron-nitride</li> <li>- <b>dispersed in xylene</b> with easier processability and handling compared to powder</li> <li>- specifically designed for <b>low polarity</b> or <b>nonpolar solvent-borne</b> systems</li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal conductivity, electrical insulation, anti-abrasion</b> and <b>barrier</b> properties</li> </ul>
B-LEAF 10401	<ul style="list-style-type: none"> <li>- Aging and corrosion protective coatings for different substrates</li> <li>- Anti-abrasion / Anti-wear coatings</li> <li>- Textile finishing</li> <li>- Polymer compounding</li> <li>- Other uses where thermal management and/or substrate protection are required</li> <li>- Low dosage level (typically from 0.5% to 5%)</li> </ul>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-BN concentrate for low polarity systems</li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal boron-nitride</li> <li>- <b>dispersed in toluene</b> with easier processability and handling compared to powder</li> <li>- specifically designed for low polarity or nonpolar solvent-borne systems</li> <li>- for functional and smart coatings, textile finishing and solution-processed polymer compounding</li> <li>- to increase mechanical strength, thermal conductivity, electrical insulation, anti-abrasion and barrier properties</li> </ul>

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## 2D hexagonal graphene

G-LEAF 09900		<ul style="list-style-type: none"> <li>- few-layers hexagonal-Graphene (h-graphene) in <b>powder form</b></li> <li>- lateral crystal size: approx. 1'000nm</li> <li>- crystal thickness: &lt;4nm</li> </ul>
G-LEAF 00001	<p>Graphene is the <b>strongest and thinnest material known</b>, it improves electricity and heat conduction, lubrication, abrasion-resistance, barrier-properties and mechanical resistance.</p> <ul style="list-style-type: none"> <li>- Only few atomic-layer thickness</li> <li>- Very high chemical and thermal stability</li> <li>- High compatibility</li> <li>- Composite materials</li> <li>- Polymer compounding</li> <li>- Heat-dissipating coatings and films</li> </ul>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-graphene <b>concentrate for aqueous systems</b></li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal graphene</li> <li>- <b>dispersed in water</b> with easier processability and handling compared to powder</li> <li>- specifically designed <b>for waterborne systems</b></li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal- and electrical conductivity, anti-abrasion</b> resistance</li> </ul>
G-LEAF 00101	<ul style="list-style-type: none"> <li>- Electrically conductive coatings and films</li> <li>- Antistatic coatings and films</li> <li>- Encapsulants</li> <li>- Aging protective and anti-corrosion coatings for different substrates</li> <li>- Anti-abrasion and anti-wear coatings</li> </ul> <p>- Low dosage level (typically from 0.1% to 5%)</p>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-graphene <b>concentrate for medium-high polarity solvent borne systems</b></li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal graphene</li> <li>- <b>dispersed in 1-methoxy-2-propanol</b> with easier processability and handling compared to powder</li> <li>- specifically designed <b>for medium-high polarity solvent borne systems</b></li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal- and antistatic conductivity, anti-abrasion</b> resistance</li> </ul>

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G-LEAF 00201	<p>Graphene is the <b>strongest and thinnest material known</b>, it improves electricity and heat conduction, lubrication, abrasion-resistance, barrier-properties and mechanical resistance.</p> <ul style="list-style-type: none"> <li>- Only few atomic-layer thickness</li> <li>- Very high chemical and thermal stability</li> <li>- High compatibility</li> <li>- Composite materials</li> <li>- Polymer compounding</li> <li>- Heat-dissipating coatings and films</li> <li>- Electrically conductive coatings and films</li> </ul>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-graphene <b>concentrate for medium polarity solvent borne</b> systems</li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal graphene</li> <li>- <b>dispersed in n-butyl acetate</b> with easier processability and handling compared to powder</li> <li>- specifically designed <b>for medium polarity solvent borne</b> systems</li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal-</b> and <b>electrical conductivity, anti-abrasion</b> resistance</li> </ul>
G-LEAF 00301	<ul style="list-style-type: none"> <li>- Antistatic coatings and films</li> <li>- Encapsulants</li> <li>- Aging protective and anti-corrosion coatings for different substrates</li> <li>- Anti-abrasion and anti-wear coatings</li> </ul> <p>- Low dosage level (typically from 0.1% to 5%)</p>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-graphene <b>concentrate for non-polar solvent borne</b> systems</li> <li>- resin-free and toluene-free</li> <li>- based on sterically stabilized few-layer hexagonal graphene</li> <li>- <b>dispersed in xylene</b> with easier processability and handling compared to powder</li> <li>- specifically designed <b>for non-polar solvent borne</b> systems</li> <li>- for functional and <b>smart coatings, textile finishing</b> and solution-processed <b>polymer compounding</b></li> <li>- to increase <b>mechanical strength, thermal-</b> and <b>electrical conductivity, anti-abrasion</b> resistance</li> </ul>

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G-LEAF 00401	<p>Graphene is the <b>strongest and thinnest material known</b>, it improves electricity and heat conduction, lubrication, abrasion-resistance, barrier-properties and mechanical resistance.</p> <ul style="list-style-type: none"> <li>- Only few atomic-layer thickness</li> <li>- Very high chemical and thermal stability</li> <li>- High compatibility</li> <li>- Composite materials</li> <li>- Polymer compounding</li> <li>- Heat-dissipating coatings and films</li> <li>- Electrically conductive coatings and films</li> <li>- Antistatic coatings and films</li> <li>- Encapsulants</li> <li>- Aging protective and anti-corrosion coatings for different substrates</li> <li>- Anti-abrasion and anti-wear coatings</li> </ul> <p>- Low dosage level (typically from 0.1% to 5%)</p>	<ul style="list-style-type: none"> <li>- two-dimensional <i>h</i>-graphene <b>concentrate for non-polar solvent borne</b> systems</li> <li>- resin-free</li> <li>- based on sterically stabilized few-layer hexagonal graphene</li> <li>- <b>dispersed in toluene</b> with easier processability and handling compared to powder</li> <li>- specifically designed for non-polar solvent borne systems</li> <li>- for functional and smart coatings, textile finishing and solution-processed polymer compounding</li> <li>- to increase mechanical strength, thermal- and electrical conductivity, anti-abrasion resistance</li> </ul>