

BORN² BOND™



Anaerobic Adhesives

Contents

OUR VISION

Collaborate and innovate to create smart adhesives that are safer, more flexible, efficient and responsive to the dynamic challenges of our environment.

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'A global leader in smart adhesives'

For over a century, we have developed smart adhesive solutions that touch and improve people's daily lives. Customers worldwide use our bonding systems in countless applications and across diverse sectors, including industrial manufacturing, construction, electronics, automotive, medical and packaging.

Our products are often invisible to the end-user, but every day they make a significant contribution to the creation of a safer, more efficient and sustainable world.

We are committed to innovation and continually invest in technological advances in our drive to develop ever more capable and adaptable 'smart' adhesives. This commitment is supported by our parent company, Arkema, a globally renowned manufacturer of specialty chemicals and advanced materials.

Through Arkema, we have access to a worldwide infrastructure and full supply chain, including innovative raw materials, more sustainable sourcing and energy-efficient production capabilities.

GLOBAL FOOTPRINT

Bostik is one of the world's largest adhesive and sealant companies.



€2.1bn
worldwide sales

6,000
employees



49
countries

4
R&D centers



Adhesive solutions by
ARKEMA
INNOVATIVE CHEMISTRY

NEW ENGINEERING ADHESIVES

As engineering adhesive applications develop, they raise new challenges. These include questions of how to apply adhesives to ever-smaller and more complex items, how to accelerate curing processes and how to reduce waste, all while complying with environmental and health and safety regulations.

In response, we have developed a portfolio of ground-breaking engineering adhesives that focus on 'by-the-dot' bonding applications. These products sit under the **Born2Bond™** brand – this name reflects our purpose and the collaborative bond we have with our customers.

OUR VALUES



INNOVATION



COLLABORATION



SAFETY &
SUSTAINABILITY

DESIGNED FOR USE IN MULTIPLE INDUSTRIES



AUTOMOTIVE



ELECTRONICS



GENERAL
ASSEMBLY



LUXURY
GOODS



MEDICAL
DEVICES



MRO



Anaerobic Adhesives

Anaerobic Adhesives

The **Born2Bond™** high-performance range of anaerobic adhesives has been formulated with sustainability and safety in the workplace in mind. Ideal for fastening and sealing processes including threadlocking, pipe sealing, retaining and gasketing, they offer a more reliable, convenient and cost-effective alternative to traditional mechanical fixings. Excellent resistance to impact, vibration, leakage and corrosion, along with high torque strength make them appropriate in both precision and heavy engineering scenarios. By replacing extensive inventory (such as washers, gaskets, pins, hemp, tapes), they can also help improve efficiency and reduce potential waste.

Delivering on our commitment to create solutions that are safer for users and better for the environment, the adhesives are not solvent based and selected grades are NSF certified. A WL Anaerobic Range specially designed to enhance the work environment and ease the EHS assessment of a new product without compromise on performance, is also available.*



REDUCED
INVENTORY



LONG-TERM
RELIABILITY



HIGH
PERFORMANCE

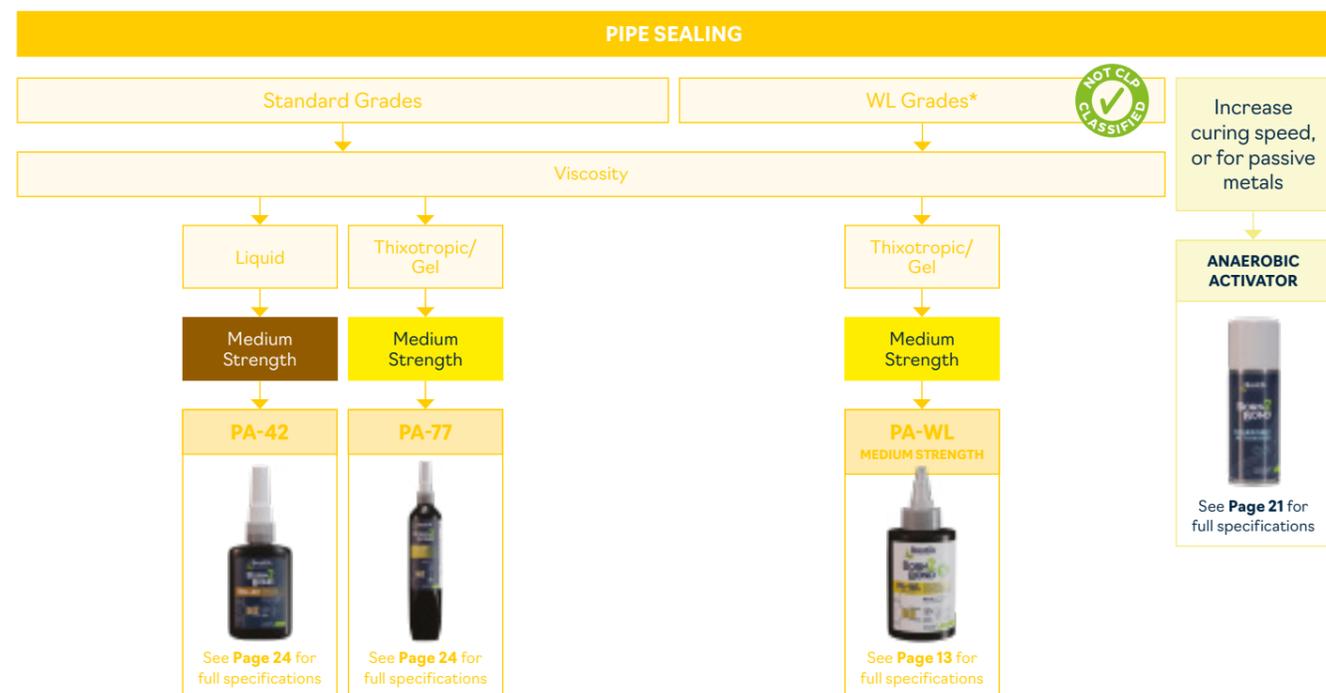
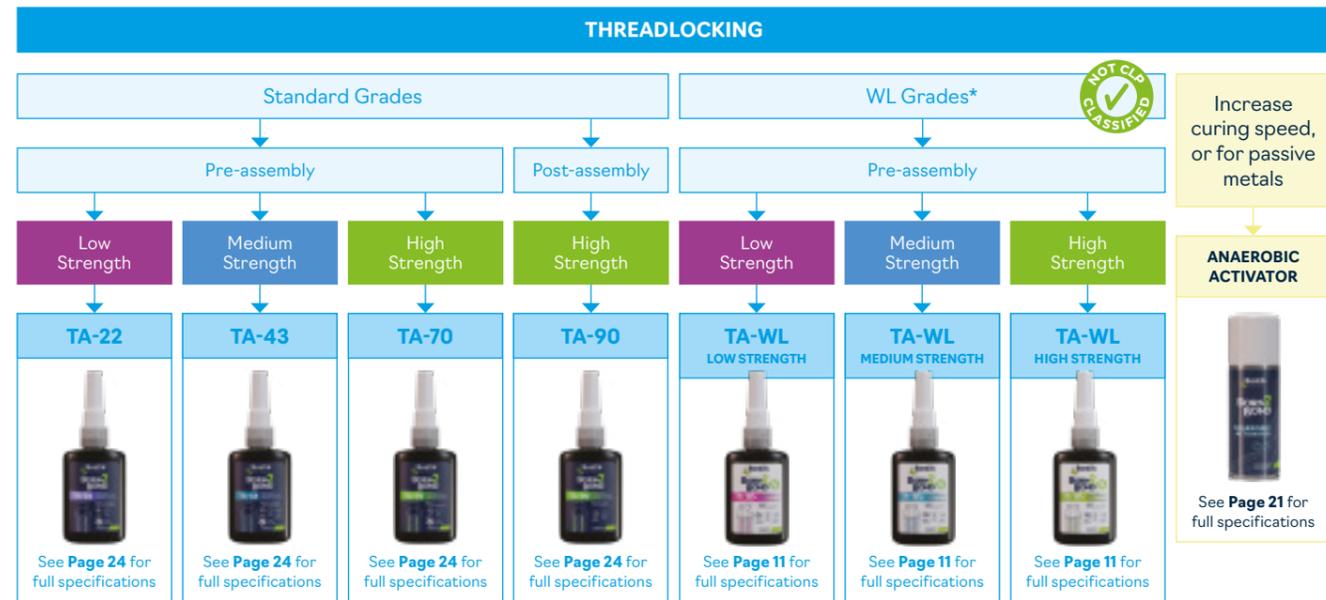
SUSTAINABILITY WITHOUT COMPROMISING PERFORMANCE



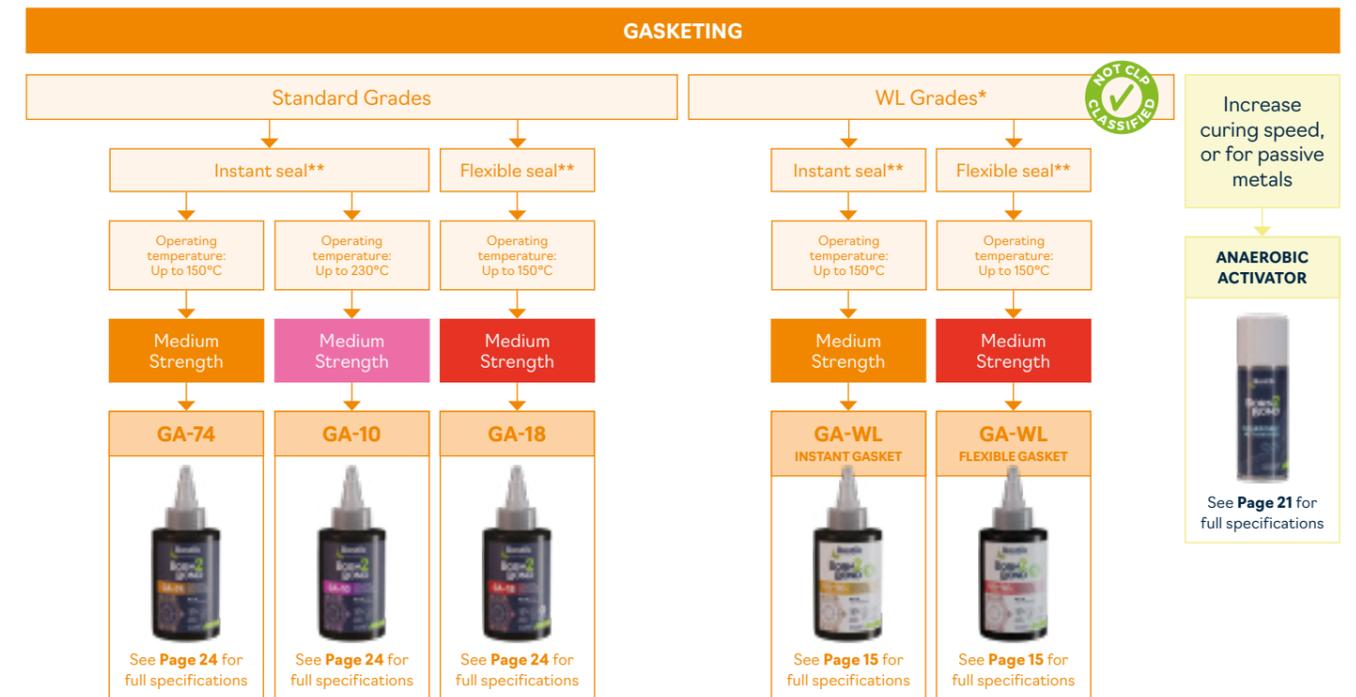
	Mechanical fasteners	Born2Bond™ Anaerobic Adhesives	Born2Bond™ WL Anaerobic Adhesives*
Stock/inventory	■	■	■
Long-term reliability	■	■	■
Ease of application	■	■	■
Versatility of application	■	■	■
Corrosion protection	■	■	■
Vibration resistance	■	■	■
Heat and chemical resistance	■	■	■
Sustainability	N/A	■	■

■ Poor ■ Moderate ■ Excellent

Please use the **Product Selector** below to identify the right solutions for your bonding requirements.



Product Selector



APPLICATIONS AND INDUSTRIES

Born2Bond™ Anaerobic Adhesives and Service Products are suitable for major applications in target equipment and devices, including:

- Powertrains
- Engines
- Compressors
- Turbines
- Pumps
- Gearboxes
- Centrifuges
- Conveyor belts
- Electric motors
- Pipes and fittings
- HVAC
- And many more...



Born2Bond™ Anaerobic Adhesives and Service Products are used across a variety of MRO industry segments, including:

- Power generation
- Oil and gas
- Transportation
- Water utilities
- Infrastructure
- Refinery
- Petrochemical
- Marine
- Food and beverage
- Aerospace MRO
- Automotive aftermarket
- And many more...



**Respect for the world
and workplace**

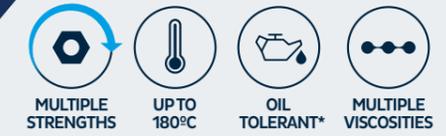
We are committed to developing sustainable adhesives and production methods and to protecting the wellbeing of our customers' workforces.

- Low-energy application processes
- Increased user comfort
- Ideal for preventative maintenance
- A WL Anaerobic Range is also available*





WL
Anaerobic
Range also
available*



Born2Bond™ Threadlocking anaerobic adhesives provide single-component, one-stop solutions for all threadlocking requirements, including preventative maintenance. Eliminating the cost and inconvenience of holding extensive inventory, these liquid adhesives fill and seal all voids to achieve a cohesive connection of metal parts that remains fixed even when subjected to extreme vibrations, temperatures or chemical substances.

FEATURES	TYPICAL APPLICATIONS	BENEFITS
<ul style="list-style-type: none"> • 100% connection – no loosening • Evenly distribute force • Vibration resistant • Corrosion prevention • Single component • Variety of viscosities and strengths • Suitable for active and passive metals 	<ul style="list-style-type: none"> • Mechanical parts assembly • Machine engineering • Gear manufacturing • Engines and powertrains 	<ul style="list-style-type: none"> • Increased reliability • Longer component life • Ease of application • One bottle meets diverse threadlocking requirements • Reduced costs • Reduced storage



	TA-22	TA-43	TA-70	TA-90	TA-WL* LOW STRENGTH	TA-WL* MEDIUM STRENGTH	TA-WL* HIGH STRENGTH
BASE	Dimethacrylate	Mod. Methacrylate	Dimethacrylate ester		Dimethacrylate ester		
VISCOSITY	900-1500	2,500-3,000	400-600	20-55	900-1500	2,000-3,000	350-550
FIXTURE TIME	20 min	<15 min	10 min	7 min	<30 min	20 min	10 min
BREAKAWAY STRENGTH ON STEEL [ISO 10964] UNSEATED	6 Nm	25 Nm	33 Nm	12 Nm	9 Nm	20 Nm	20 Nm
COLOR	Purple	Blue	Green	Green	Purple	Blue	Green
TEMPERATURE RANGE	-55 to 180°C			-55 to 150°C	-55 to 180°C		
NSF CERTIFIED	S6		No		No		

See [page 24](#) for full range

Choose the right solution using our [Product Selector](#) on [Pages 6/7](#)

TDS and SDS available on request



WL
Anaerobic
Range also
available*



Born2Bond™ Pipe Sealing anaerobic adhesives are a reliable, adaptable solution, suitable for all types of threaded metal pipes and fittings, and both new installations and preventative maintenance. Filling and sealing all voids, these single component adhesives provide 100% surface-to-surface contact, achieving a cohesive, durable connection that will not fail even when subjected to vibration, extreme temperatures or chemical substances. A convenient, cost-effective alternative to conventional sealing alternatives like hemp or PTFE tapes, these adhesives eliminate the need for additional inventory.

FEATURES

- 100% connection – no loosening
- Vibration resistant
- Corrosion prevention
- Single component
- Variety of viscosities and strengths
- Suitable for active and passive metals

TYPICAL APPLICATIONS

- Engines and powertrains
- Pumps and compressors
- Liquid and gas storage
- Hydraulic systems
- Metal pipes and fittings

BENEFITS

- Increased reliability
- Ease of application
- Reduced costs
- Reduced storage requirements

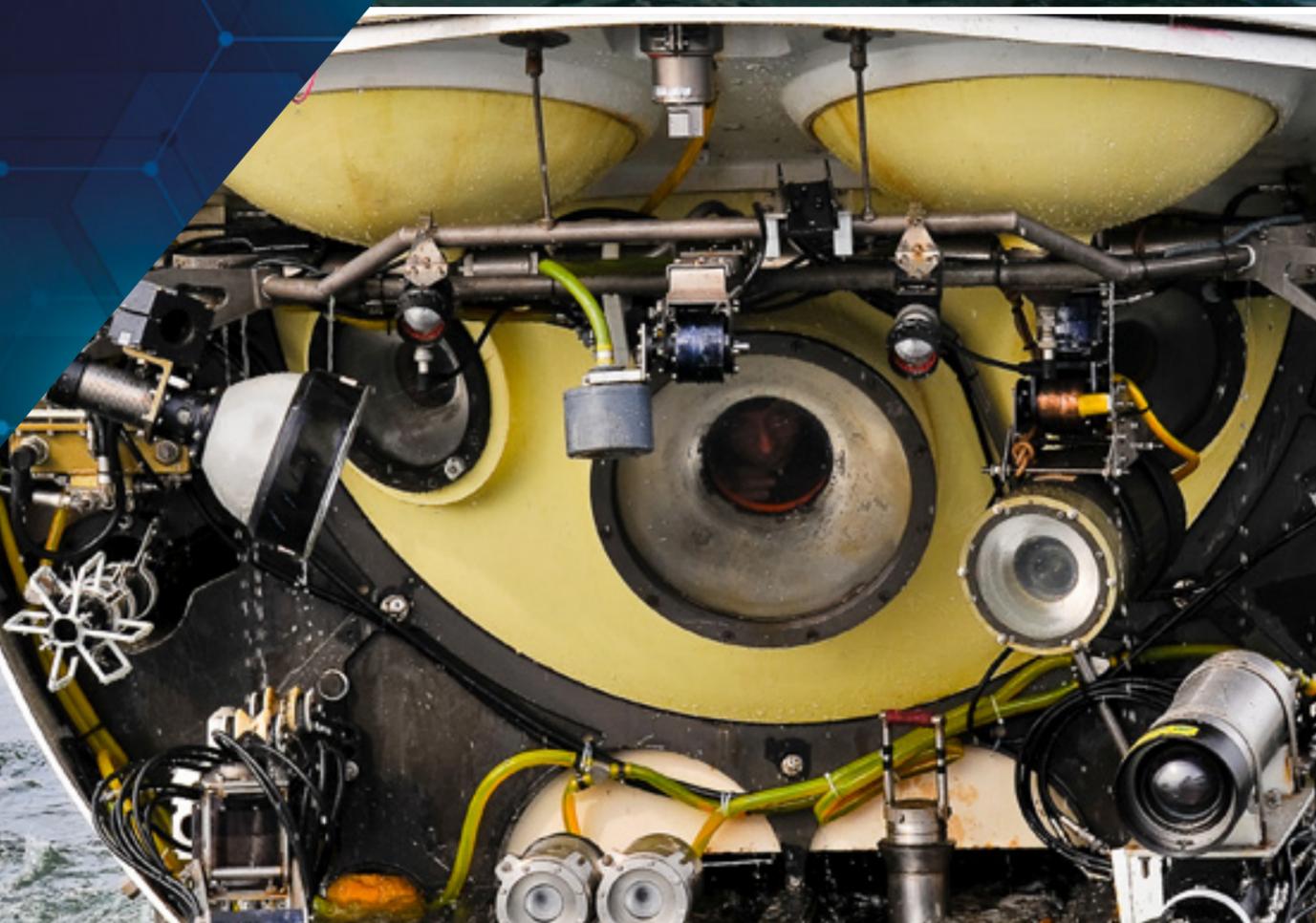


	PA-77	PA-42	PA-WL*
BASE	Dimethacrylate ester		Dimethacrylate ester
VISCOSITY (mPa.s)	80.000-90.000	400-800	100.000-200.000
FIXTURE TIME	60 min	10-20 min	30 min
BREAKAWAY STRENGTH ON STEEL [ISO 10964] LOOSE	11 Nm	15 Nm	10-20 Nm
COLOR	Yellow	Brown	Yellow
TEMPERATURE RANGE	-55 to 180°C	-55 to 150°C	-55 to 180°C
NSF CERTIFIED	S2	No	No

See **page 24** for full range

Choose the right solution using our **Product Selector** on **Pages 6/7**

TDS and **SDS** available on request



WL
Anaerobic
Range also
available*



Born2Bond™ Gasketing anaerobic adhesives are a single-component, cost-effective alternative to conventional pre-formed gaskets on metal flanges. Flexible, durable and resistant to wear and tear, they can be used during installation or for preventative maintenance. Achieving 100% surface-to-surface contact, the adhesives create a cohesive, durable connection that can withstand vibration, extreme temperatures and exposure to oils, solvents and water. They also offer better stress distribution and, unlike traditional gaskets, do not require any 'bedding-in'.

FEATURES	TYPICAL APPLICATIONS	BENEFITS
<ul style="list-style-type: none"> Outstanding fatigue strength Vibration resistant Corrosion prevention Prevents sagging and micro-movement Higher power transmission Single component Variety of viscosities and strengths Instant and flexible seal options Suitable for active and passive metals 	<ul style="list-style-type: none"> Engines and powertrains Pumps and compressors Storage of liquids and gas Gearboxes and transmissions 	<ul style="list-style-type: none"> Increased reliability Less machining Easy-to-automate assembly Reduced costs Reduced storage requirements



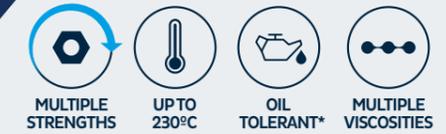
	GA-74	GA-18	GA-10	GA-WL* INSTANT GASKET	GA-WL* FLEXIBLE GASKET
BASE	Dimethacrylate ester		Mod. Acrylate	Dimethacrylate ester	
VISCOSITY (mPa.s)	30.000-50.000	200.000-800.000	40.000-140.000	5.000-20.000	23.000-35.000
FIXTURE TIME	15-30 min	<12 hr	<12 hr	45 min	40 min
TENSILE SHEAR STRENGTH ON STEEL [ISO 4587]	5-8.5N/mm ²	>5N/mm ²	<5N/mm ²	8.5N/mm ²	>5N/mm ²
COLOR	Orange	Red	Pink	Orange	Red
TEMPERATURE RANGE	-55 to 150°C		-55 to 230°C	-55 to 150°C	
NSF CERTIFIED	No	S2	No	No	

See **page 24** for full range

Choose the right solution using our **Product Selector** on **Pages 6/7** | **TDS and SDS** available on request



WL
Anaerobic
Range also
available*



Born2Bond™ Retaining anaerobic adhesives are a cost effective, adaptable alternative or addition to mechanical retaining processes. Capable of bonding all types of cylindrical assemblies, these single-component solutions also seal all metal joints to eliminate the risk of fretting corrosion. They achieve 100% surface-to-surface contact, producing a cohesive, durable connection capable of withstanding vibration, extreme temperatures and chemical substances.

FEATURES

- High power transmission
- Resistance to dynamic loads
- Vibration resistant
- Corrosion prevention
- Single component
- Variety of viscosities and strengths
- Suitable for active and passive metals

TYPICAL APPLICATIONS

- Gear manufacturing
- Machine engineering
- Bearing assembly
- Drive shafts
- Conveyor belts
- Centrifuges
- Turbines

BENEFITS

- Increased reliability
- Extends component life
- Enables more precise, compact design
- Reinforces or replaces machined elements
- Reduces costs



	RA-38	RA-03	RA-20	RA-41	RA-48	RA-60	RA-WL*
BASE	Urethane Acrylate	Meth-acrylate	Dimethacrylate ester	Urethane Meth-acrylate	Dimeth-acrylate	Dimeth-acrylate ester	Dimeth-acrylate ester
VISCOSITY (mPa.s)	2.000-3.000	100-150	5.000-12.000	400-800	400-600	Paste	350-550
COMPRESSIVE SHEAR STRENGTH ON STEEL [ISO 10123]	>25N/mm ²	>26N/mm ²	>26N/mm ²	>6N/mm ²	>26N/mm ²	>18N/mm ²	>15N/mm ²
COLOR	Green	Green	Green	Yellow	Green	Grey	Green
TEMPERATURE RANGE	-55 to 180°C	-55 to 150°C	-55 to 230°C	-55 to 150°C	-55 to 180°C	-55 to 150°C	-55 to 150°C
NSF CERTIFIED	No	S5		No		S5	No

See **page 24** for full range

Choose the right solution using our **Product Selector** on **Pages 6/7**

TDS and **SDS** available on request

ANAEROBIC ADHESIVES RANGE

THREADLOCKING

THREADLOCKING PRODUCT RANGE

Born2Bond™ Threadlocking adhesives are formulated in low, medium or high strength and available in 50ml and 250ml bottles, suitable for both manual and automated dispensing.



50ml bottles for
TA-22, TA-43, TA-70, TA-90 and TA-WL*

250ml bottles for
TA-22, TA-43, TA-70, TA-90 and TA-WL*

PIPE SEALING

PIPE SEALING PRODUCT RANGE

Born2Bond™ Pipe Sealing adhesives are supplied in 50ml and 250ml bottles, suitable for manual and automated dispensing. Manual dispensing-only options are provided by a 50ml accordion or 250ml tube.



50ml bottles for
PA-42

250ml bottles for
PA-42

50ml accordion bottles for
PA-77 and PA-WL*

250ml tubes for
PA-77 and PA-WL*

GASKETING

GASKETING PRODUCT RANGE

Born2Bond™ Gasketing adhesives are supplied in 50ml (accordion) and 250ml (tube) for manual dispensing processes. A 300ml cartridge option enables both manual and automated dispensing.



50ml accordion bottles for
GA-10, GA-18, GA-74 and GA-WL*

250ml tubes for
GA-10, GA-74 and GA-WL*

300ml cartridges for
GA-18 and GA-WL*

RETAINING

RETAINING PRODUCT RANGE

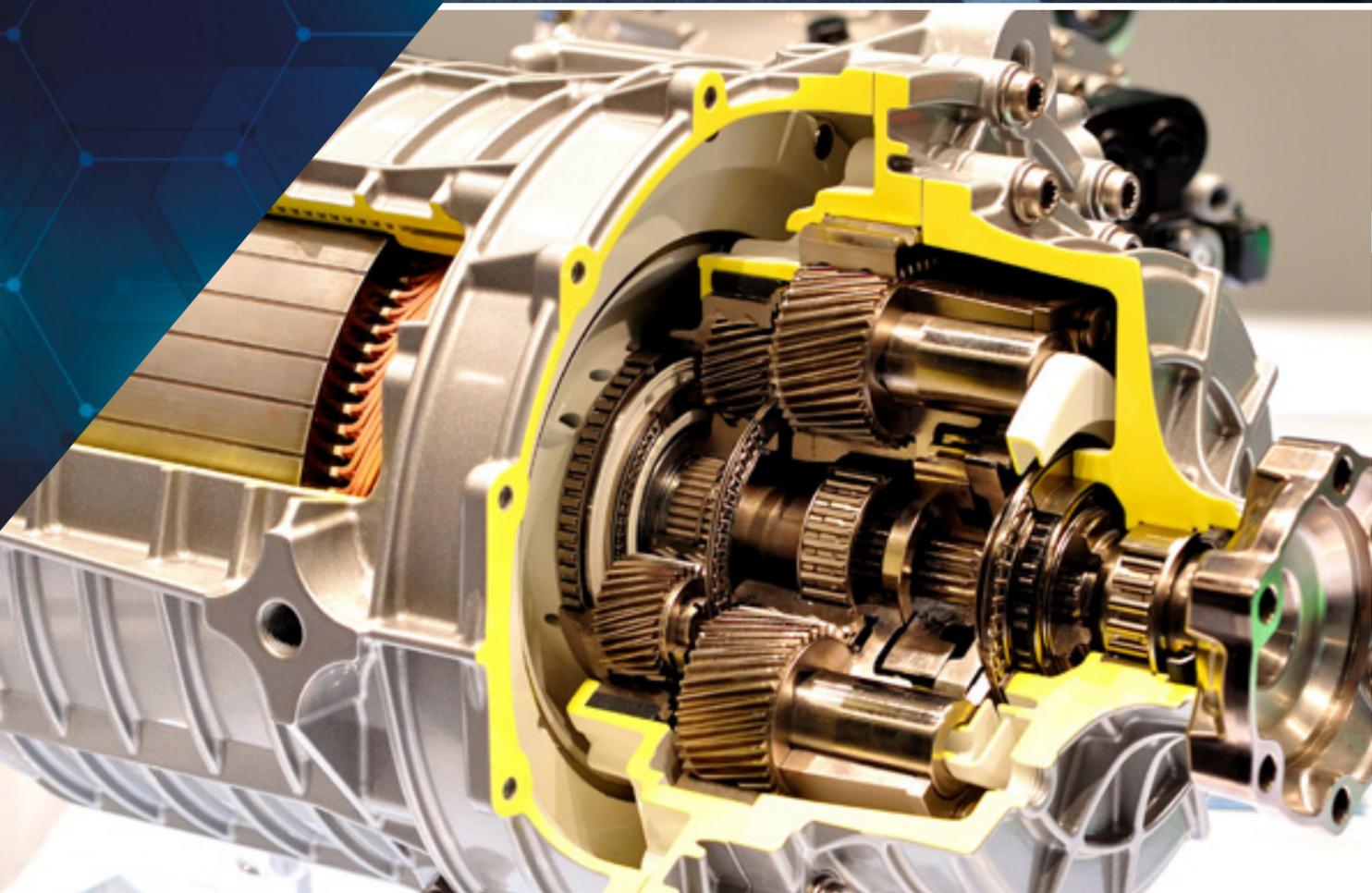
Born2Bond™ Retaining adhesives are offered in 50ml and 250ml bottles, suitable for both manual and automated dispensing. A 50ml accordion is available, suitable for manual dispensing only.



50ml bottles for
RA-03, RA-20, RA-38, RA-41, RA-48 and RA-WL*

250ml bottles for
RA-03, RA-20, RA-38, RA-41, RA-48 and RA-WL*

50ml accordion
bottles for RA-60



To ensure optimal performance of **Born2Bond™** adhesives, we provide a selection of easy-to-use ancillary products for effective surface preparation, faster curing and removal of cured product.

Born2Bond™ Anaerobic Activator is a solvent-based product that accelerates and supports anaerobic adhesive curing on passive metals like stainless steel, chromated metals and zinc. It can also accelerate cure speed in larger gaps and increase bonding strength.

Born2Bond™ Pre-Bonding Cleaner is suitable for cleaning of all kinds of substrates prior to bonding. Solvent-based and supplied in aerosol form, it will easily remove grease, oil, lubricants and other contaminants without leaving any residue.

Born2Bond™ Adhesive & Gasket Remover is easy to apply and creates a foam-like layer, softening old gaskets and cured adhesives for removal within 15 minutes.

FEATURES

- Fast-evaporating with no residue
- Can be used at low temperatures (<5°C)
- On-part lifetime of 30 days

FEATURES

- Fast evaporation
- No residues
- Suitable for multiple substrates including sensitive plastics

FEATURES

- Removes cured gaskets and adhesives within 15 minutes
- Minimal damage to flanges and surfaces
- Suitable for multiple substrates

TYPICAL APPLICATIONS

Stainless steel bolts and shafts, threadlocking, pipe sealing, gasketing, retaining.

TYPICAL APPLICATIONS

Metal and plastic parts, composite materials, flanges, bolts, shafts.

TYPICAL APPLICATIONS

Cleaning of surfaces, flanges, gearboxes, metal housings, pumps.



Substrate and surface preparation

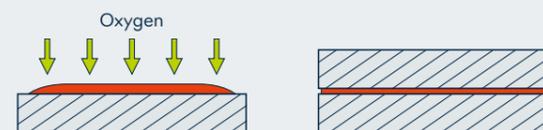
The nature of the substrate and its surface impacts the bondline performance.

- The surface should be cleaned with the appropriate cleaner to eliminate surface contaminants and increase wettability before applying the adhesives and to achieve the best performance.
- For slightly oily surfaces, an oil tolerant product such as **Born2Bond™ TA-43** and **Born2Bond™ RA-03** can be used.
- For cleaning, we recommend **Born2Bond™ Pre-Bonding Cleaner**.
- To remove cured product, we recommend **Born2Bond™ Adhesive & Gasket Remover**.
- Mechanical pretreatment (sanding, grinding, laser etching, etc.) will improve the performance, especially for retaining and gasketing applications.
- The curing speed is dependent on material, temperature and gap size.
- To improve the curing speed, or shorten the fixture time, we recommend using **Born2Bond™ Anaerobic Activator**.



How do anaerobic adhesives cure?

- Anaerobic adhesives cure when excluded from oxygen and with metal contact.
- When applied, the adhesive stays liquid because of the oxygen in the air.
- When assembled (threadlocking, pipe sealing, retaining, gasketing) the cure will start.
- After full cure, the adhesive is a highly-crosslinked polymer with strong durability.



Influences on curing speed

- **Temperature:** the higher the temperature, the faster the adhesive will cure. Low temperatures will slow down the curing.
- **Material:** Anaerobic adhesives will cure best on "active" substrates like mild steel, aluminum and copper alloys. "Passive" substrates like stainless steel and chrome will slow down the curing.
- **Gap size:** Smaller gaps will have a faster curing than bigger gaps.
- **Activator:** The use of an activator such as **Born2Bond™ Anaerobic Activator** will speed up the curing and is recommended on passive materials or cold environments.

Application process

The method in which adhesive is applied impacts bondline performance.

- Bondline performance depends on the quantity and consistency of adhesive applied to the surface.
- Adhesives can be applied using automatic dispensing equipment and/or manual systems (e.g. syringes, bottles).
- For precise dosing, use dispensing tips made of plastic (PP, PTFE). Do not use metal dispensing tips. Fully automated systems will improve the control and speed of dispensing.



The list of features in this table will help you identify which products best match your needs.

		NSF CERTIFIED	BASE	FLUORE-SCENIC	COLOUR	VISCOSITY (mPa.s)	TEMPERATURE RANGE	FIXTURE TIME (MIN)	STRENGTH	MAX. THREAD SIZE/GAP FILL
THREADLOCKING	TA-WL LOW STRENGTH*	No	Dimethacrylate ester	Yes	Purple	900-1.500	-55 to 180°C	<30	9Nm**	M20
	TA-22	S6	Dimethacrylate	Yes	Purple	900-1.500	-55 to 180°C	20	6Nm**	M20
	TA-WL MEDIUM STRENGTH*	No	Dimethacrylate ester	Yes	Blue	2.000-3.000	-55 to 180°C	20	20Nm**	M36
	TA-43	S6	Mod. Methacrylate	Yes	Blue	2.500-3.000	-55 to 180°C	<15	25Nm**	M36
	TA-WL HIGH STRENGTH*	No	Dimethacrylate ester	Yes	Green	350-550	-55 to 180°C	10	20Nm**	M20
	TA-70	S6	Dimethacrylate ester	Yes	Green	400-600	-55 to 180°C	10	33Nm**	M20
	TA-90	No	Dimethacrylate ester	Yes	Green	20-55	-55 to 150°C	7	12Nm**	M6
PIPESEALING	PA-WL PIPE SEALANT*	No	Dimethacrylate ester	Yes	Yellow	100.000-200.000	-55 to 180°C	30	10-20Nm†	M80
	PA-77	S2	Dimethacrylate ester	No	Yellow	80.000-90.000	-55 to 180°C	60	11Nm†	M80
	PA-42	No	Dimethacrylate ester	Yes	Brown	400-800	-55 to 150°C	10-20	15Nm†	M36
GASKETING	GA-WL INSTANT GASKET*	No	Dimethacrylate ester	Yes	Orange	5.000-20.000	-55 to 150°C	45	8.5N/mm²‡	0.3mm
	GA-74	No	Dimethacrylate ester	Yes	Orange	30.000-50.000	-55 to 150°C	15-30	5-8.5 N/mm²‡	0.3mm
	GA-WL FLEXIBLE GASKET*	No	Dimethacrylate ester	Yes	Red	23.000-35.000	-55 to 150°C	40	>5N/mm²‡	0.25mm
	GA-18	S2	Dimethacrylate ester	No	Red	200.000-800.000	-55 to 150°C	<12 hr	>5N/mm²‡	0.25mm
	GA-10	No	Mod. Acrylate	No	Pink	40.000-140.000	-55 to 230°C	<12 hr	<5N/mm²‡	0.25mm
RETAINING	RA-WL HIGH STRENGTH*	No	Dimethacrylate ester	Yes	Green	350-550	-55 to 150°C	<30	>15N/mm²§	0.15mm
	RA-38	No	Urethane Acrylate	No	Green	2.000-3.000	-55 to 180°C	10	>25N/mm²§	0.2mm
	RA-03	S5	Methacrylate	No	Green	100-150	-55 to 150°C	15	>26N/mm²§	0.1mm
	RA-20	No	Dimethacrylate ester	No	Green	5.000-12.000	-55 to 230°C	60	>26N/mm²§	0.2mm
	RA-41	No	Dimethacrylate ester	No	Yellow	400-800	-55 to 150°C	20-30	>6N/mm²§	0.1mm
	RA-48	No	Urethane Methacrylate	No	Green	400-600	-55 to 180°C	10-15	>26N/mm²§	0.15mm
	RA-60	S5	Dimethacrylate	No	Grey	Paste	-55 to 150°C	10-15	>18N/mm²§	0.5mm

**Breakaway strength on steel [ISO 10964] unseated. † Breakaway strength on steel [ISO 10964] loose. ‡ Tensile shear strength on steel [ISO 4587]. § Compressive shear strength on steel [ISO 10123].

Understanding the specifics of **Born2Bond™** products, how they are used, and the properties that make them unique is essential to making the most of their value. Bostik's **Born2Bond™** Academy offers in-depth training of the products and provides access to resources for technical learning, troubleshooting and more, with all participants receiving a certificate of completion.

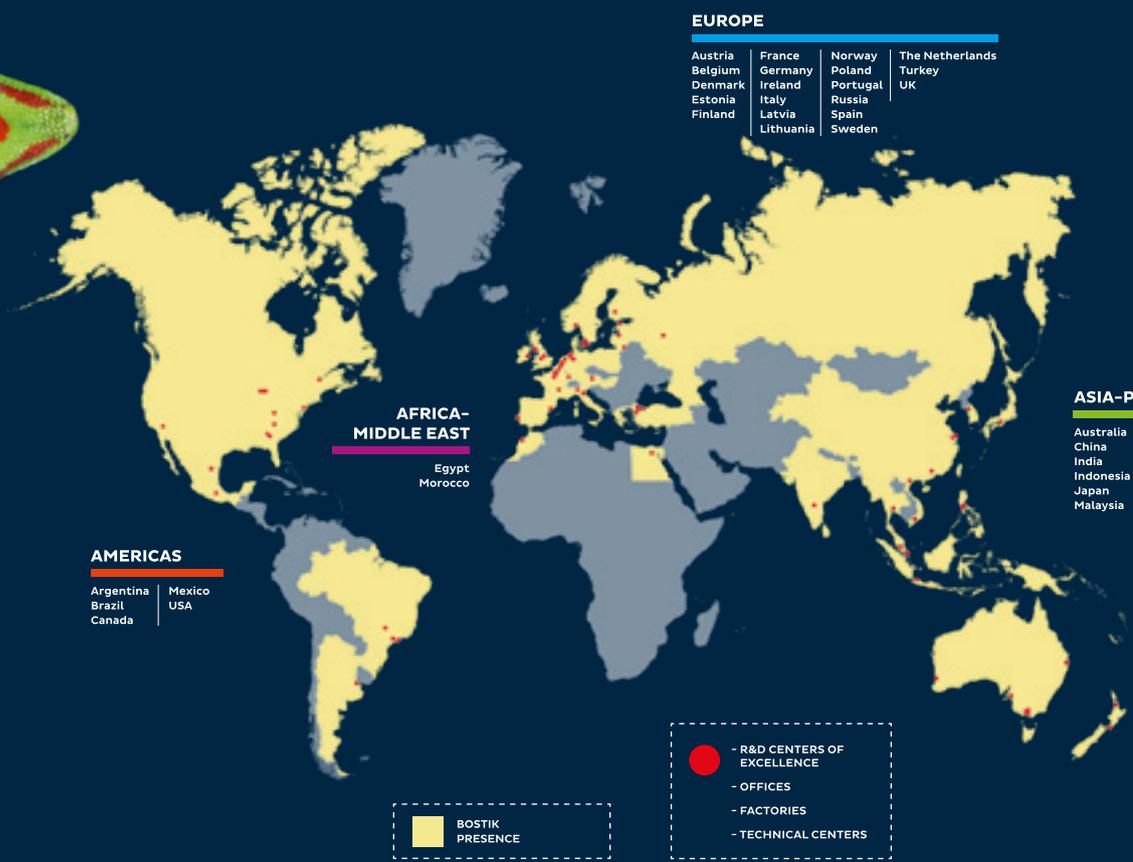
Our global team of experts have structured the training to give you a deeper understanding of:

- Technologies
- Applications
- Equipment



The **Born2Bond™** Engineering Adhesives team is ready to provide additional tailor-made training, tools and materials, including:

- Case studies
- Application videos
- Product demos
- Demo kits
- Plant surveys
- Seminars and webinars
- Solution guides
- MRO Industry Programs
- And many more...



DISCLAIMER

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The statements, technical information and recommendations contained herein are not exhaustive, are believed to be accurate as of the date hereof, and are not warranted or guaranteed in any way. They represent typical results for the products and are based on Bostik's research only. The Product Catalogue relies upon your knowledge and input, and as such, its results are based solely upon the information you provide and the choices that you make. Since the conditions and methods of use of the products and the information relied upon by you are beyond our control, Bostik expressly disclaims any and all liability and damages that may arise from any use of the Product Catalogue, the products, the results therefrom, or reliance on the information contain herein.

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The information provided herein relates only to the specific products designated and may not be applicable when such products are used in combination with other materials or in any process. **Bostik encourages you to always read and understand (1) the Technical Data Sheet ("TDS") and (2) the Safety Data Sheet ("SDS") for all products, which are located on our corporate website or are available upon request.** You are welcome and encouraged to contact your customer service representative to discuss your specific requirements and to determine what product is appropriate for you and your applications.

Nothing contained herein constitutes a license to practice under any patent, and it should not be construed as an inducement to infringe any patent. You are advised to take appropriate steps to be sure that any proposed use of the products will not result in patent infringement.

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