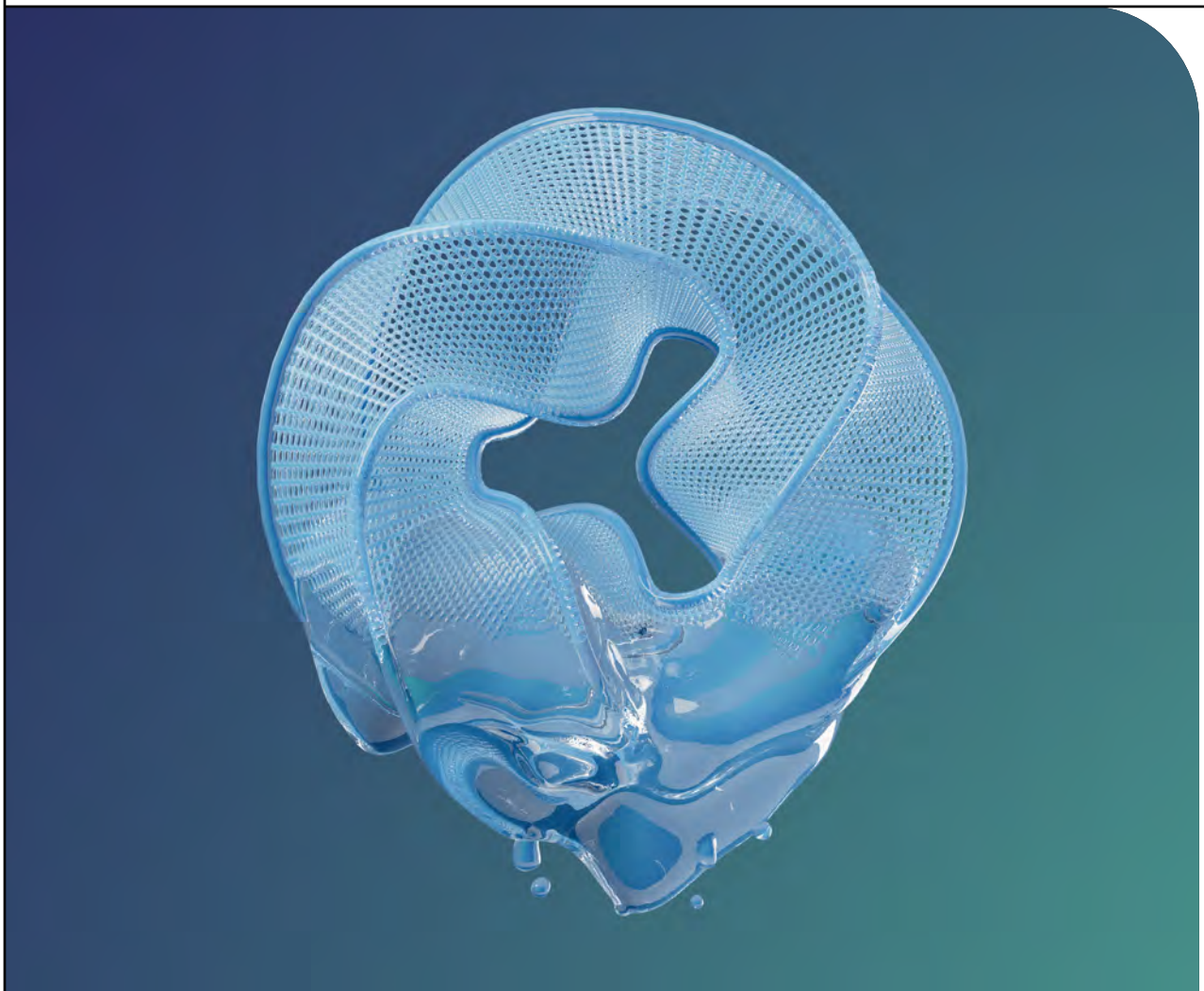
ARKEMA

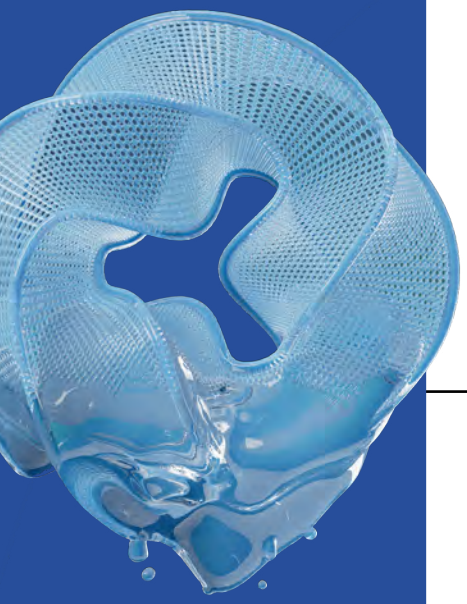
NEXTDIMENSION®

3D PRINTING

UV-curable custom formulations



Liquid resins for energy curing



Arkema, through its Sartomer® and N3xtDimension® product lines, is a pioneer in designing advanced liquid resins for energy- curable additive manufacturing. Decades of supporting the 3D printing industry allows Arkema to be uniquely positioned to build innovative liquid resins specifically designed to address the challenges of the industry. We can synthesize custom structures, deliver advanced thermosetting resins, and engage in collaborative development to bring solutions tailored to mass manufacturing.

The dedicated team of scientists at the Center of Excellence for Energy-Curable Resins are invaluable players in the success of our partners in markets such as medical, dental, electronics, transportation, and consumer goods.

N3XTDIMENSION®

N3xtDimension® advanced liquid resins are market leading solutions for energy-curable additive manufacturing:

- Custom formulation expertise and new materials to enable **customer-specific product development**.

SARTOMER®

Building blocks and additives, including state-of-the-art tailor-made resins, specialty oligomers, monomers, cationic resins and photoinitiators, enabling a unique toolbox to fine-tune end formulations.

PRODUCT HIGHLIGHTS

- Exceptional material performance
- Tailor-made formulations
- Application-specific materials
- High resolution
- Superior surface finish
- Excellent processing

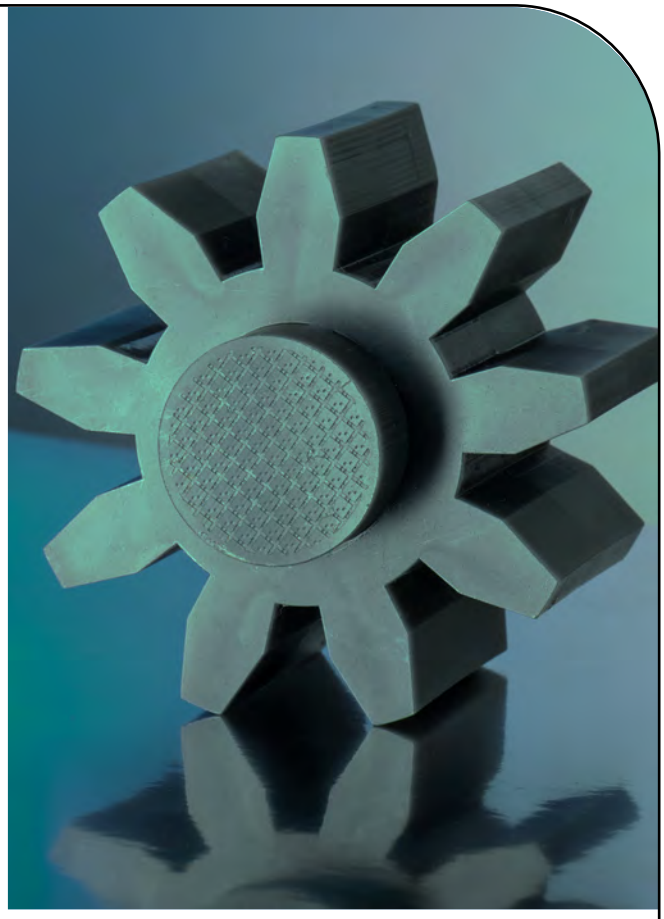
An integrated offering

N3XTDIMENSION®

Custom formulations
for UV-curable additive manufacturing

SLA DLP BJ MJP LCD

355 nm | 385 nm | 395 nm | 405 nm



Through its N3xtDimension® product line, Arkema offers formulations and material development to push additive manufacturing to the next level.

- → Custom formulation development
- → State-of-the-art printing equipment
- → Advanced material performance
- → Scale-up and manufacturing support
- → Logistics and packaging services
- → Sustainability partner with bio-based materials

PARTNER WITH US FOR YOUR ADDITIVE MANUFACTURING MATERIALS

Our dedicated development team is available to help you achieve **tailor-made materials** to address your specific application challenges.

OUR N3XTDIMENSION® FORMULATIONS FOR UV-3D PRINTING

N3D-PR184-BIO FOR MODELING

SLA DLP LCD

Bio-based material with 53% bio-content, providing reliable, accurate, high-resolution printing for modeling and prototyping applications.

N3D-PR184-BIO	
Liquid	
Appearance	Gray
Viscosity @ 25°C	750 mPa.s
Material	
Tensile Strength	32 MPa
Tensile Modulus	1970 MPa
Tensile Elongation	7%
Flexural Strength	70 MPa
Flexural Modulus	2030 MPa
HDT @ 0.455 MPa	81°C
HDT @ 1.8 MPa	45°C
T_α by DMA	118°C

N3XTDIMENSION® BIO-BASED

With 53% bio-content

KEY FEATURES

- 53% bio-content
- High stiffness
- High accuracy & resolution
- Easy processability
- Good feature visualization

APPLICATIONS

- Functional prototyping
- Modeling

MAIN MARKETS

- Dental
- Industrial

N3D-DMT303 FOR DENTAL MODELING

SLA DLP LCD

High-performance, rigid material that allows for accurate and fast printing of dental models and thermoforming molds for the manufacturing of clear dental aligners.

N3D-DMT303*	
Liquid	
Appearance	Off-white/tan
Viscosity @ 25°C	450-630 mPa.s
Material	
Tensile Strength	52 MPa
Tensile Modulus	2600 MPa
Tensile Elongation	6%
Flexural Strength	86 MPa
Flexural Modulus	2530 MPa
HDT @ 0.455 MPa	66°C
HDT @ 1.8 MPa	57°C
T_α by DMA	109°C

KEY FEATURES

- High accuracy
- High throughput
- Suitable heat deflection temperature for thermoforming applications
- Good feature visualization

APPLICATIONS

- Dental & orthodontic models
- Thermoforming molds

MAIN MARKET

- Dental

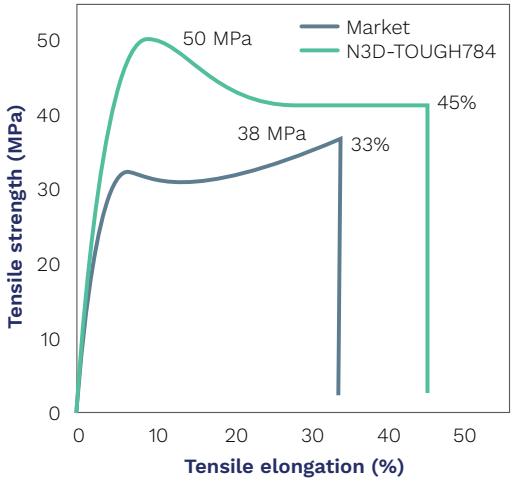
* This product may not be available in all regions. Please contact your local sales manager for availability.

N3D-TOUGH784 FOR TOUGHNESS

SLA DLP LCD

High-strength material suitable for snap-fit assemblies and other end-use applications requiring weatherability, impact resistance, and high elongation.

N3D-TOUGH784	
Liquid	
Appearance	Black
Viscosity @ 25°C	1000 mPa.s
Material	
Tensile Strength	50 MPa
Tensile Modulus	2020 MPa
Tensile Elongation	45%
Flexural Strength	64 MPa
Flexural Modulus	1450 MPa
HDT @ 0.455 MPa	56°C
HDT @ 1.8 MPa	45°C
T_α by DMA	104°C



Performance of N3D-TOUGH784 demonstrates higher strength, elongation, and toughness versus competitor in controlled study.

KEY FEATURES

- Moderately high rigidity
- Excellent tensile strength and flexibility
- Superior weatherability
- Plastic deformation

APPLICATIONS

- Jigs & fixtures
- Tooling
- Snap-fit assemblies
- Durable end-use parts
- Shoe insoles

MAIN MARKETS

- Automotive
- Consumer goods
- Industrial
- Transportation

N3D-RIGID785 FOR HIGH-STRENGTH

SLA DLP LCD

Material with ultra high-strength & rigidity while maintaining good elongation, making it suitable for high-performance functional prototypes and demanding engineering applications.

N3D-RIGID785	
Liquid	
Appearance	Grey
Viscosity @ 25°C	400 mPa.s
Material	
Tensile Strength	101 MPa
Tensile Modulus	3920 MPa
Tensile Elongation	7%
Flexural Strength	177 MPa
Flexural Modulus	3870 MPa
HDT @ 0.455 MPa	118°C
HDT @ 1.8 MPa	105°C
T_α by DMA	147°C

KEY FEATURES

- Ultra-high strength
- High heat deflection temperature
- Excellent toughness

APPLICATIONS

- Functional prototyping
- Electrical connectors
- Engineering

MAIN MARKETS

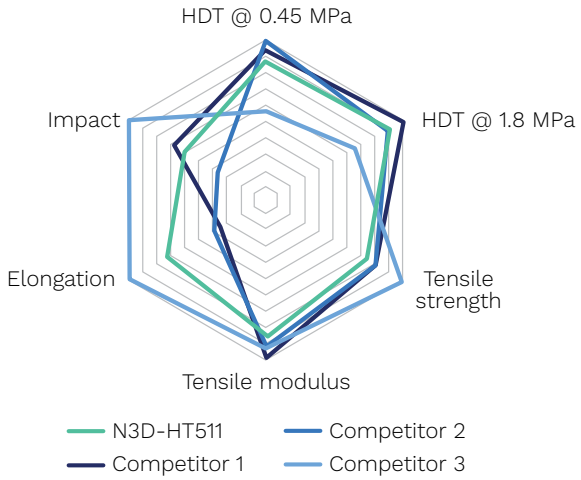
- Automotive
- Consumer goods
- Industrial
- Transportation
- Electronics

N3D-HT511 FOR HIGH TEMPERATURE

SLA DLP LCD

Stiff material that is solvent resistant and autoclavable. It exhibits injection molding like surface quality, having an excellent balance of high temperature resistance and toughness.

N3D-HT511	
Liquid	
Appearance	Black
Viscosity @ 25°C	650 mPa.s
Material	
Tensile Strength	54 MPa
Tensile Modulus	2400 MPa
Tensile Elongation	7%
Flexural Strength	81 MPa
Flexural Modulus	2040 MPa
HDT @ 0.455 MPa	130°C
HDT @ 1.8 MPa	91°C
T_α by DMA	148°C



N3D-HT511 provides an excellent mix of high HDT and toughness for high-temperature applications.

KEY FEATURES

- Tough & rigid
- High heat deflection temperature
- Chemical & water resistance

APPLICATIONS

- High temperature component testing
- Electrical connectors
- Tooling
- Molding

MAIN MARKETS

- Automotive
- Industrial
- Transportation
- Electronics

N3D-FR512 FOR FLAME RETARDANCY

DLP LCD

Flame retardant material that achieves a UL-94 rating of V-0 at 0.8 mm while maintaining good print accuracy with fine feature parts. **N3D-FR512** is characterized by excellent green strength allowing for robust printing and easy cleanup and processing.

N3D-FR512*	
Liquid	
Appearance	Black
Viscosity @ 25°C	2000 mPa.s
Material	
UL-94 flammability rating	V-0 @ 0.8 mm
Tensile Modulus	5100 mPa
Tensile Strength	42 mPa
Flexural Strength	57 mPa
Flexural Modulus	3300 mPa
HDT @ 0.455 MPa	170°C
HDT @ 1.8 MPa	94°C

KEY FEATURES

- High strength & HDT
- Liquid at room temperature
- Robust printing and processing

APPLICATIONS

- Flame retardant materials
- Electrical connectors

MAIN MARKETS

- Electronics
- Transportation

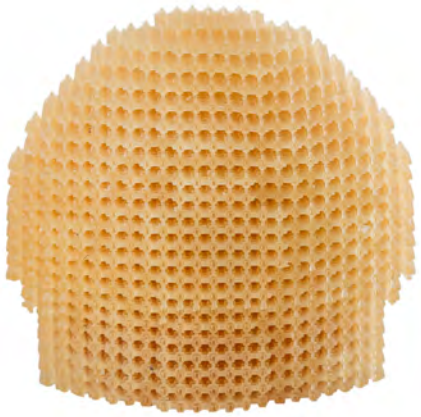
*This product may not be available in all regions. Please contact your local sales manager for availability.

N3D-DIELEC731 FOR ULTRA-LOW LOSS

SLA DLP LCD

An unfilled, dielectric material with ultra-low loss, suitable for radio frequency (RF) devices.

N3D-DIELEC731	
Liquid	
Appearance	Yellow
Viscosity @ 25°C	1960
Material	
Dielectric Constant, 1 kHz	2.98
Dielectric Constant, 10 kHz	2.59
Dissipation Factor, 10 GHz	0.0030
Breakdown Strength, V/µm	800
Volume Resistivity, Ω*cm	6.8269E+16
Surface Resistivity, Ω/sq	2.72018E+16
CTE 20°C (Above T_g/Below T_g)	76.73/135.3
T_α Onset (°C), TGA	216°C



KEY FEATURES

- → Ultra-low dielectric loss
- → Low moisture uptake
- → High breakdown strength
- → Stable dielectric constant across broad frequency range

APPLICATIONS

- → High frequency RF devices
- → Antenna & connector elements
- → Luneburg lenses
- → Waveguides
- → Dielectric reflectarrays

MAIN MARKETS

- → Electronics
- → Automotive
- → Industrial
- → Transportation

N3D-CAST245 FOR CASTING

DLP LCD

Investment casting material with outstanding feature replication and cast quality. N3D-CAST245's low viscosity allows for easy processing and it's low thermal expansion is excellent for large pieces.

N3D-CAST245*	
Liquid	
Appearance	Purple
Viscosity @ 25°C	80 mPa.s
Material	
Tensile Strength	900 MPa
Tensile Modulus	12.5 MPa
Tensile Elongation	4%
Flexural Modulus	1050 MPa
Flexural Strength	35 MPa
Coefficient of Thermal Expansion (below/above Tg)	20/210

KEY FEATURES

- → Excellent cast quality
- → Low thermal expansion
- → Melts during burnout cycle

APPLICATIONS

- → Metal casting
- → Jewelry casting

MAIN MARKETS

- → Jewelry
- → Dental
- → Industrial
- → Consumer goods

*This product may not be available in all regions. Please contact your local sales manager for availability.

N3D-CAST373 FOR JEWELRY CASTING

DLP LCD

Investment casting material optimized for easy stone setting while maintaining good casting quality. Prints quickly with high resolution and its low viscosity allows for easy cleanup.

N3D-CAST373*	
Liquid	
Appearance	Red
Viscosity @ 25°C	190 mPa.s
Material	
Tensile Strength	11 MPa
Tensile Modulus	365 MPa
Tensile Elongation	15%
Flexural Modulus	400 MPa
Flexural Strength	20 MPa
Coefficient of Thermal Expansion (below/above Tg)	30/270

KEY FEATURES

- → Good cast quality
- → Flexible
- → Opaque surface

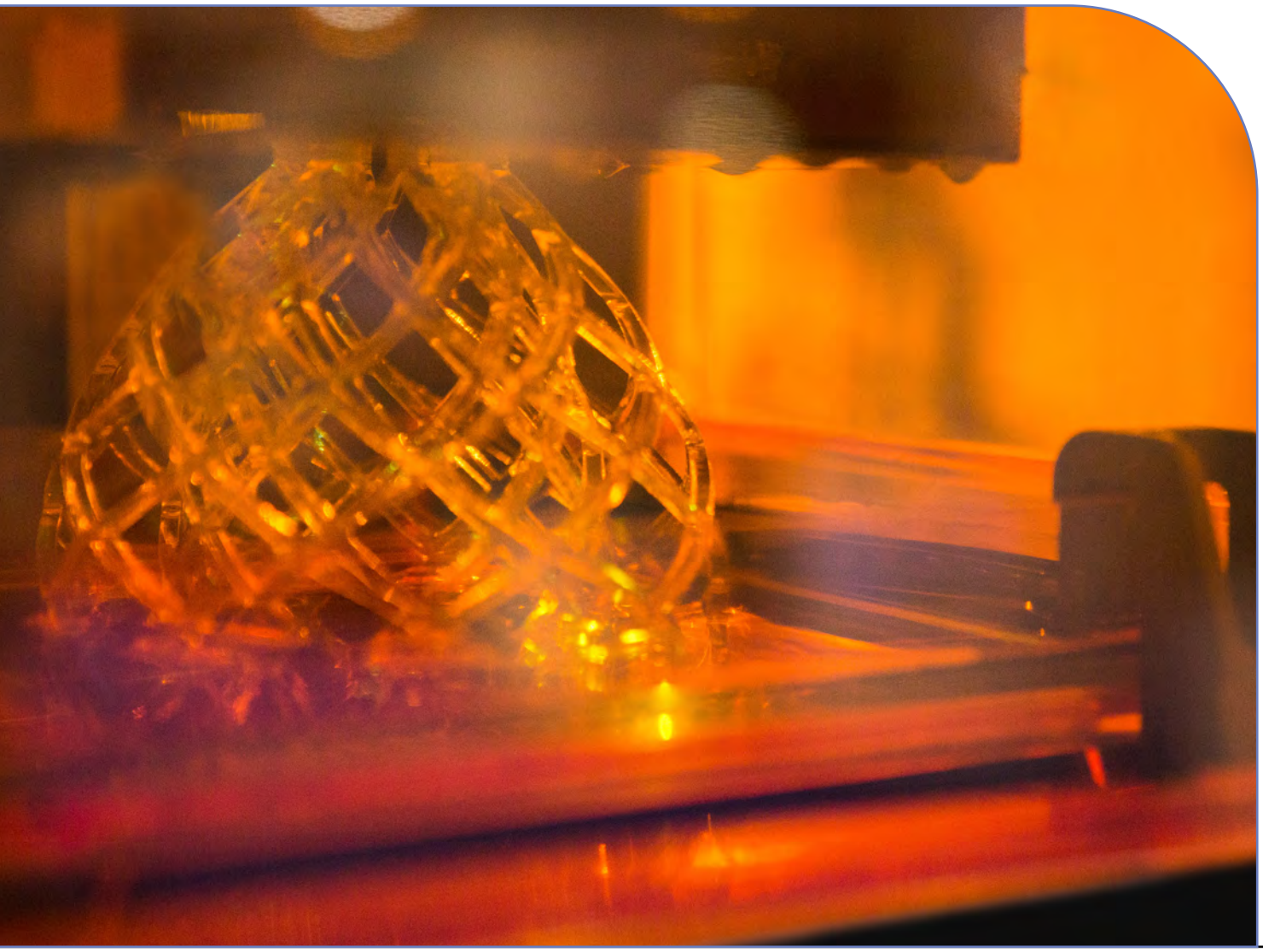
APPLICATIONS

- → Jewelry casting
- → Stone setting

MAIN MARKETS

- → Jewelry
- → Consumer goods
- → Industrial

*This product may not be available in all regions. Please contact your local sales manager for availability.



PRODUCT RANGE OVERVIEW

	Product	Properties								
		Viscosity @ 25°C (mPa.s)	**Tensile elongation** (%)	**Tensile modulus** (MPa)	**Tensile strength** (MPa)	**Flexural modulus** (MPa)	**Flexural strength** (MPa)	**HDT @ 0.45 MPa** (°C)	**HDT @ 1.8 MPa** (°C)	**Tαd by DMA** (°C)
 MODELING	N3D-PR184-BIO 53% Bio content	750	7	1970	32	2070	70	81	45	118
	N3D-DMT303	390	6	2600	52	2530	86	66	57	109
 TOUGHNESS	N3D-TOUGH784	1000	45	2020	50	1250	58	56	45	104
 HIGH STRENGTH	N3D-RIGID785	400	7	3920	101	3870	177	118	105	147
 HIGH TEMPERATURE	N3D-HT511	650	7	2400	54	2040	81	130	91	148
 FLAME RETARDANCY	N3D-FR512 *UL-94 V0 @ 0.8 mm*	2000	4.2%	5100	42	3300	57	170	94	-
 CASTING	N3D-CAST245	115	4	900	11	750	13	–	–	–
	N3D-CAST373	190	15	365	11	400	20	–	–	–

	Product	Properties								
		Viscosity @ 25°C (cP)	**Dielectric constant** (@ 1 kHz/23°C)	**Dielectric constant** (@ 10 GHz/23°C)	**Dissipation factor** (@ 10 GHz)	**Breakdown strength** (@ 23°C)	**Volume resistivity** (@ 23°C)	**Surface resistivity** (@ 23°C)	**CTE 20°C** (above Tg/below Tg)	**T_d onset (°C), TGA**
 ULTRA-LOW LOSS	N3D-DIELEC731	1960	2.98	2.59	0.0030	800 V/µm	6.8269E+16 Ω*cm	2.72018E+16 Ω/sq	76.73/ 135.3	216

OUR CORE VALUES

RESPONSIBLE INNOVATION

MARKET-DRIVEN PRODUCT DEVELOPMENT

OPERATIONAL EXCELLENCE

SUSTAINABILITY

Broad portfolio of specialty acrylate resins and photoinitiators	Technical excellence fostering collaborative innovation	Global manufacturing with high quality standards
Over 65 years' experience in acrylate chemistry and energy curing systems	Dedicated teams of experts across key market fields	Reliable supply chain with flexibility and reactivity
Performance attributes designed for application-specific needs	Local R&D and pilot facilities for rapid scale-up of new products	Prioritizing transparency and continuity of supply
More than 400 specialty monomers, oligomers, additives and PIs	Specializing in material design & co-development	Dedicated sustainability & regulatory experts worldwide
	4 R&D centers across 3 continents	

Visit **sartomer.arkema.com** for a comprehensive online resource.
Find your region to access exclusive features.

SCAN ME

PRODUCT FINDERS

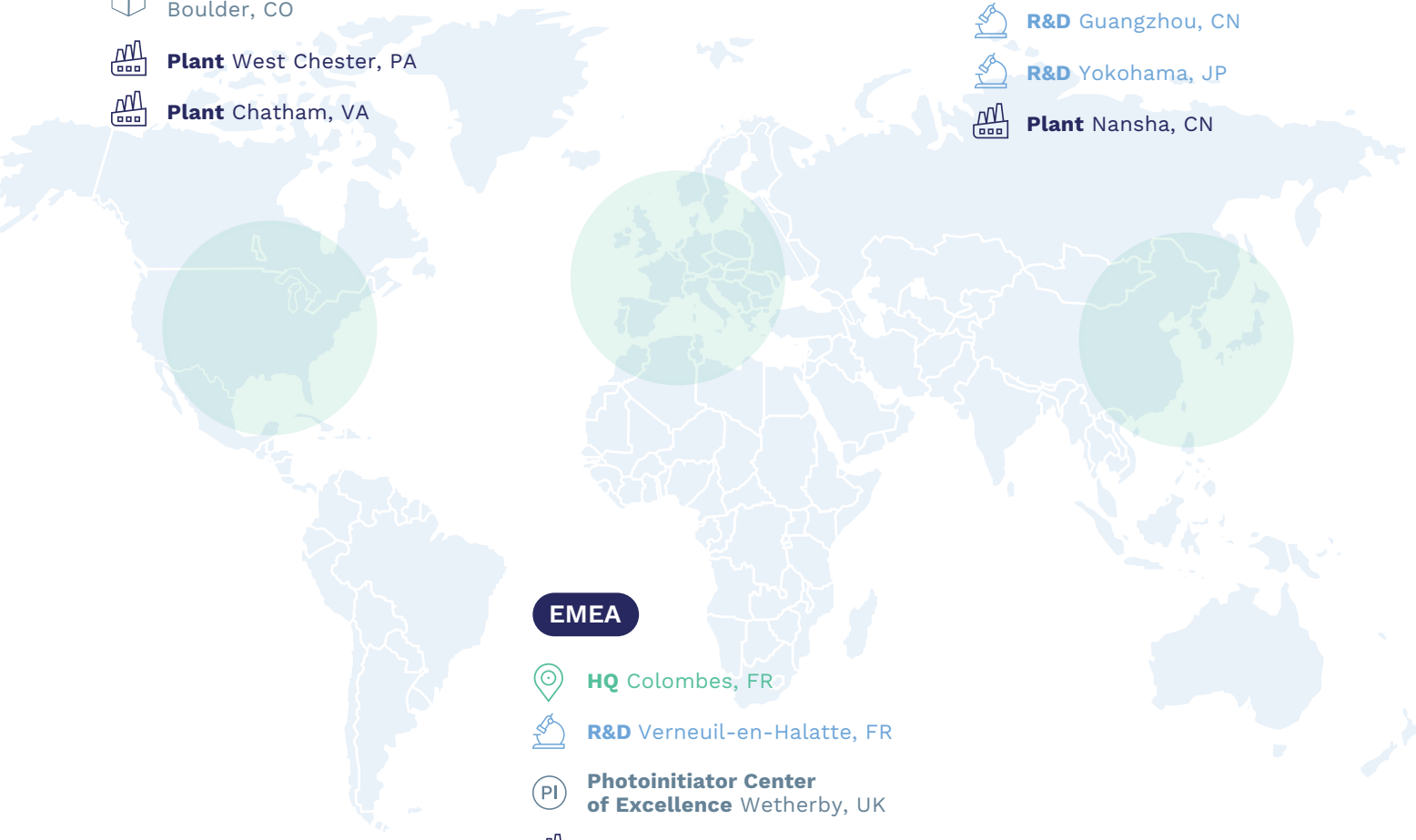
AUTOMATIC SAMPLING

TDS/SDS & LITERATURE

ASK OUR EXPERTS

A WORLDWIDE LEADER

Global capability with local supply and expertise.



AMERICAS

- **HQ** Exton, PA
- **R&D** Exton, PA
- **3DP Center of Excellence** Exton, PA
- **3DP Applications Dev. Center** Boulder, CO
- **Plant** West Chester, PA
- **Plant** Chatham, VA

ASIA

- **HQ** Hong Kong, S.A.R. CN
- **R&D** Guangzhou, CN
- **R&D** Yokohama, JP
- **Plant** Nansha, CN

EMEA

- **HQ** Colombes, FR
- **R&D** Verneuil-en-Halatte, FR
- **Photoinitiator Center of Excellence** Wetherby, UK
- **Plant** Villers-Saint-Paul, FR

OUR COMMITMENTS

- **Prioritize safety**
- **Reduce waste**
- SARTOMER® BIO-BASED **Use renewable resources as much as possible**
- **Shrink our environmental footprint**
- **Lower energy and water consumption**
- **Develop openness and dialogue with stakeholders**

SCAN FOR MORE
3D PRINTING LITERATURE

Arkema Inc.
502 Thomas Jones Way
Exton, PA 19341
T (+1) 610.363.4100
Sartomer.exto-development@arkema.com
sartomer.com

Headquarters: Arkema France
420 rue d'Estienne d'Orves
92705 Colombes Cedex
FRANCE
T +33 (0)1 49 00 80 80

Sartomer.information@arkema.com
sartomer.arkema.com

SARTOMER® – 0272G/4.2024/3 – Pictures: Getty Images, Adobe Stock – © 2024 Arkema. All rights reserved.

Please consult Arkema's disclaimer regarding the use of Arkema's products on https://www.arkema.com/global/en/products/product-safety/disclaimer/
Arkema – a French société anonyme, registered in the Nanterre (France) Trade and Companies Register under the number 319 632 790

arkema.com