

UV CURABLE INDUSTRIAL ADHESIVES

UniCure Galaxy-2235

UV-curable adhesive for plastic bonding, ideal for PETG

Single-part, solvent-free UV / visible-light curable adhesive for fast assembly of glass, metal and plastic components

TDS NO.	UF/TDS/UNICURE-GALAXY-2235
PRODUCT CODE	UCGA-2235
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STATUS	Current issue
PRODUCT TYPE	UV-curable industrial adhesive

PRODUCT UV industrial adhesive	CURE UV / visible light, seconds	COMPONENTS Single part, no mixing	SOLIDS 100 %	PACK 1 kg · 5 kg
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01 PRODUCT DESCRIPTION

UniCure Galaxy-2235 is a one-component UV-curable adhesive for plastic bonding, ideal for PETG, with high overlap shear on polycarbonate, acrylic and PETG, high elongation and a flexible cured film.

UV adhesives cure in seconds upon exposure to UV / visible light, heat or activator for fast assembly of industrial glass, metal and plastic components. They bond a wide range of substrates, including dissimilar materials that cannot be joined by welding or other traditional methods, and their exceptional strength makes them a replacement for slower, older joining technologies such as epoxies and mechanical fasteners.

02 FEATURES AND BENEFITS

- Ideal for PETG
- High overlap shear strength on PC, acrylic and PETG
- Elongation above 200 % – tolerates differing thermal expansion
- Cures at 200 m/min reference under 320 W/cm
- High-strength bonds
- Cure only when exposed to light – permits alignment of parts prior to bonding
- Single-part product – no mixing required
- 100 % solids, solvent-free, non-flammable – no waste, increased safety
- UV lamps require less electricity and less space than heat-cure ovens

03 TYPICAL PROPERTIES

Physical property before cure	Typical value
Components	1K
Physical appearance	Hazy liquid
Specific gravity at 27 °C	1.0 – 1.1
Viscosity at 25 °C	2,200 – 2,900 mPa·s (20 rpm)
Flash point, PMCC	> 212 °F (100 °C)
Shelf life at 25 °C	6 months
Reactivity per 320 W/cm	200 m/min (reference value)

Typical properties of the cured adhesive

Property	Typical value
Overlap shear strength (ISO 4587)	Polycarbonate > 7 N/mm ² (> 1000 psi)*; Acrylic > 6 N/mm ² (> 870 psi)*; PETG > 5 N/mm ² (> 725 psi)*

Property	Typical value
Block shear strength (ASTM D4501)	PMMA / glass > 8 N/mm ² (> 1160 psi)*; PMMA > 6 N/mm ² (> 870 psi)**
Tensile strength (ISO 37)	13 N/mm ² (1900 psi)
Elongation at break (ISO 37)	> 200 %
Hardness (ISO 868)	80 Shore A

* Substrate failure was observed. ** Cohesive failure.

04 SUBSTRATES AND APPLICATIONS

Substrates	PC polycarbonate, PCTG, ABS, PA polyamide, PU polyurethane, PVC.
Application areas	Alternator and flywheel applications, appliance assembly, automotive sub-assemblies, ruggedising plastic housings, bonding high-end glass displays, aerospace vibration dampening.
Rule	Bond strength depends on surface preparation, joint design and light penetration; qualify every substrate pair by trial.

05 APPLICATION CONDITIONS

Parameter	Recommendation
Surface preparation	All bond surfaces should be clean and free from grease, mould release or other contaminants prior to dispensing the adhesive.
Dispensing	Dispense from cartridge, syringe or metering valve; keep dispensing equipment shielded from light.
Light source	UV / visible lamps (mercury, metal-halide or LED, 365 – 405 nm). Select a cure speed and double the production speed by adding another lamp to the line.
Cure speed	Depends on lamp intensity, distance from the light source, required depth of cure, bond gap and percentage of light transmission through the substrate.
Bond gap	Keep the bond gap to a minimum; for gap-filling and shadow areas select the anaerobic / activator grade (2280) or the high-elongation grade (2240).
Oxygen inhibition	Surfaces exposed to air may require high-intensity (> 100 mW/cm ²) UV light to produce a dry surface; flood the bond area with an inert gas such as nitrogen where needed.
Post-cure	Allow the thoroughly cured joint 24 hours before full loading; light-curing generally produces some heat – place parts in the curing area to reduce heating effects on components.

06 UV CURING – PROCESS VARIABLES

UV curing is a photochemical reaction, so the result depends on the UV energy actually delivered to the film and on how far it penetrates. Treat the variables below as process parameters, not press defaults.

Variable	Effect and control
Lamp	UV / visible-light lamps sized for the substrate transmission and bond gap; measure irradiance at the joint. Shadow areas need the anaerobic or activator route.
UV dose (mJ/cm ²)	Total energy per unit area = irradiance × exposure time. It falls as line speed rises and as the lamp ages. Measure it with a radiometer at the substrate plane and record the value that gives full cure at set-up.
Order of cure difficulty	Opaque white and dense black need the highest dose: white scatters UV and black absorbs it. Set the lamp for the hardest colour first.

Variable	Effect and control
Film weight	A heavier film needs more energy to cure through. Use the recommended anilox or mesh and verify cure at the darkest, heaviest-coverage area.
Line speed	Reference speeds are for new lamps at the stated power; reduce speed or add lamps for heavy films, dark coverage or aged lamps. Log lamp hours and replace at rated life.
Oxygen inhibition	A marginal dose leaves a tacky, poorly resistant surface. Increase irradiance or reduce speed before changing anything else.

Checking cure on press

Confirm cure on the darkest, heaviest-coverage area immediately after the lamp: (1) thumb-twist test – no marking or smearing under firm thumb pressure with a twisting motion; (2) solvent double-rub – no softening or removal with an IPA- or MEK-wetted cloth to the agreed number of rubs; (3) adhesion – no lifting on a cross-hatch / tape test after 24 h where the substrate allows; (4) rub, block and product-resistance tests against the agreed standard. Surface tack, low rub resistance, poor adhesion and strong acrylate odour are symptoms of under-cure; brittleness and cracking are symptoms of over-cure.

07 TROUBLESHOOTING GUIDE

Observation	Likely cause	Corrective action
Tacky surface at the joint edge	Oxygen inhibition at the exposed fillet	Increase irradiance; use inert-gas flooding; select a surface-cure grade
Low bond strength	Contaminated surface; bond gap too large; insufficient light through the substrate	Clean and degrease; reduce gap; increase dose or use a more transparent substrate / activator
Stress cracking of plastic parts	Moulded-in stress in the part; aggressive monomer	Anneal parts; reduce open time; select the plastic-bonding grade (2230 / 2235)
Yellowing	Over-exposure to UV or heat	Reduce dose; use low-yellowing grade (2220)

08 CLEAN-UP

Use a UV wash or isopropanol on dispensing tips and fixtures before the adhesive cures for plates, aniloxes, screens, stencils, ducts and pumps. UV products do not dry in the unit, but they cure wherever UV or strong daylight reaches them and cured residue is very difficult to remove – clean while the product is still liquid, shield the unit during stoppages, and never use conventional blanket or plate washes whose residues (wetting agents, silicone) cause craters and poor adhesion on the next job.

09 STORAGE AND SHELF LIFE

UniCure Galaxy-2235 is a 100 % solids, reactive acrylate system. Its shelf life is limited by slow thermal and light-initiated polymerisation, so storage is governed by light, heat and contamination rather than ventilation.

Container	Original, tightly closed, UV-opaque containers. Keep containers covered on press – an open container skins over under ambient lighting.
Light and heat	Store in the shade, away from direct sunlight and sources of heat; exposure to either raises viscosity and initiates cure in the container.
Temperature	5 – 25 °C. Allow cold product to reach room temperature and stir before use. Not frost-sensitive.
Press returns	Product taken from the press must not be returned to the original container; keep it separately and use it first on the next run after checking for contamination and gel.
Admixtures	No admixtures other than the additives listed in this sheet.
Shelf life	Six (6) months from the date of manufacture at the above conditions. Check viscosity, freedom from gel particles and cure speed before using product beyond shelf life.

Stock rotation First in, first out; keep label and batch number legible; do not mix batches in one container.

10 HANDLING, HEALTH AND SAFETY

Uncured UV products are based on acrylate monomers and oligomers, which are skin and eye irritants and can cause skin sensitisation (allergic contact dermatitis) after repeated contact. Once fully cured the film is inert and no longer presents this hazard.

Personal protection	Nitrile gloves (change at once if contaminated – acrylates permeate thin gloves); barrier cream may be used in addition to gloves, never instead of them. Safety glasses where splashing is possible; apron or long sleeves.
Skin contact	Direct skin contact is the primary route of exposure. Wipe the product off with a clean, dry cloth – never with solvent or reducer – then wash with soap and plenty of water. Change contaminated clothing.
Eye contact	Rinse immediately with plenty of water for at least 15 minutes, holding the lids open; seek medical advice.
Ventilation	Use in well-ventilated areas with local exhaust at the print unit and at the UV lamp housing; low odour does not mean absence of vapour.
UV lamp safety	Never look at an operating lamp or expose skin to stray UV; interlocks and shielding must be in place. Medium-pressure lamps generate ozone – exhaust the housing to outside air. Lamps contain mercury: handle broken lamps as hazardous waste.
Fire	Not classified as flammable for transport, but the product will burn. Keep away from open flames and hot surfaces.
Spills	Contain with inert absorbent; do not flush to drain. Collect into a closed container for disposal.
Safety Data Sheet	Read the UniCure Galaxy-2235 Safety Data Sheet before use. Application must comply with local and national health, safety and environmental regulations.

11 WASTE DISPOSAL

Uncured product, contaminated absorbent, wash-up residues and empty but wet containers are chemical waste and must be disposed of through a licensed contractor in accordance with local and national regulations. Where permitted, small quantities can be cured under a UV lamp on a disposable substrate and the cured solid disposed of as non-hazardous industrial waste. Do not discharge product or washings to drains or watercourses.

12 REGULATORY AND END-USE INFORMATION

Food contact	Not intended for food-contact applications.
Photoinitiators	Free from TPO; assessed against the EuPIA Charter.
VOC	100 % solids; no solvents.
Transport classification	Not classified as dangerous goods for transport (verify against the current SDS).

13 DISCLAIMER AND REVISION HISTORY

The information in this data sheet has been compiled from laboratory experience and internal standardised tests with virgin, standard packaging-grade substrates and is given in good faith. The performance of the product and its suitability for the customer's purpose depend on the conditions of use, the equipment and the materials being printed, which are beyond our control; no statement in this sheet should be construed as a guarantee of performance in a specific application, and Uniform Industries accepts no responsibility for abnormal results obtained on lower-grade or sub-standard substrates. Customers should satisfy themselves, by their own trials, that the product meets their requirements in all respects before commencing production, and should carry out a full evaluation of performance and safety-in-use before commercial application. Uniform Industries' liability for printing-related problems clearly attributable to incompatibility with the ink system it recommended is

limited to replacement of the product consumed. All sales are subject to our standard terms and conditions of sale.

Revision	Date	Change
01	September 2026	First issue in the consolidated data-sheet format, compiled from the product catalogue and technical literature.