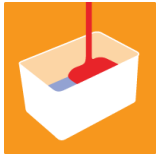


IRS 2040-1

Epoxy Potting Compound

Opti-tec 4200

Optically Clear Polyurethane Encapsulant & Potting Compound



Our customer

Rotech Systems and Encoders

Customer benefits

- Tripled annual sales
- Reliable order schedule and inventory management
- Process improvements
- Peace of mind

Protecting electronics in mining environments

Rotech Systems and Encoders manufactures rotary encoders and vibration sensors for mining equipment, products that need protection to survive dust and debris. When Rotech's potting compound went obsolete, the search for a replacement led to a collaboration with electronics materials supplier **Intertronics** that yielded process improvements, a reliable order schedule, and nearly tripled annual sales from 1,500 to 4,000 units.

Rotech manufactures motion encoders, vibration sensors, and associated speed relays for conveyer belts, mixers, elevators and more heavy-duty equipment used in harsh environments, such as quarries and mines. Sensitive electronic components used in its products require protection from the dust and debris at those sites, and they had specified an epoxy potting compound to do this.

Rotech encountered challenges in scaling up the production of its rotary encoders with this original product. Its supplier couldn't regularly deliver on time or forecast delivery beyond the inventory it held. Rotech was unable to satisfy the increasing purchase orders they were winning, as it couldn't guarantee getting material to support the growing volumes.

When the news came that the epoxy was being discontinued, Rotech resolved that its next potting material would have a trusted and proven commercial supplier.

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New potting compound, new opportunities

In his search for a new supplier, Rotech Managing Director John Hoey quickly found Intertronics, long established in the sales of materials for electronics assembly, including potting compounds, and a key player in the sector.

“Rotech’s requirements were specific and clear,” recalled Craig Geerthsen, Lead Sales Specialist at Intertronics, quickly responding to the new enquiry. “It needed reasonably low viscosity to flow around the sensors without forming air pockets, thermal conductivity to disperse heat, and fire retardancy to satisfy the UL94 V-0 rating demands of the mining industry. Rotech was mixing the epoxy by hand, so it wanted to have suitable package sizes to accommodate that, as well as bulk packaging to accommodate higher volumes and automation in the future.

Intertronics’ philosophy is to always look at each application afresh and in detail. It doesn’t just offer a datasheet duplicate – this doesn’t guarantee an optimal material choice. “We realised that we didn’t need to mimic the previous product exactly. Craig and his team helped me go back to the basic needs of this vibration sensor and get it bang on, without over-specifying,” said Hoey.

After this initial discussion, Intertronics recommended that Rotech evaluate **IRS2040-1 Epoxy Potting Compound**, a two part, flame-retardant epoxy encapsulant. IRS2040-1 has a viscosity of 6,500 mPa.s @ 25°C and, crucially, flammability of UL94 V-0 @ 3mm. Rotech technicians tested a sample on the production line and reported that it adhered well to the thermoplastic shell, was easy to mix by hand and was supplied in useful quantities for their development.

Specifying a potting compound that performed well was only half the battle. “Our biggest challenge, and what was holding us back from upscaling, was finding a partner who could supply what we needed on time, in the right quantities,” Hoey said.

“Most companies we’ve come across do either bulk or small packages. IRS 2040 is available in 1 kg twinpacks, which suits us for our current production levels, but is also available in bulk quantities. Like all epoxies, it has a shelf life and we don’t have unlimited storage, so inventory management is important. Intertronics’ ability to deal with call-offs and scheduled orders takes the uncertainty out of it.”

“Rotech tells us their forecast for the year and we ship at specific intervals. We get regular orders coming in and they know it’s there on the shelf when needed,” added James Heydon, Head of Customer Sales Support.

Rotech were mixing 1 kg quantities within the twin-pack packaging, but with their growing order book and a new reliable supply chain, Intertronics wanted to ensure continued satisfaction. “Even at that stage, they were asking ‘Where might you be in six months?’ and keeping avenues to semi-automated and automated mixing systems open,” said Hoey.

Transparency in potting

During product development, Rotech’s design engineers had a requirement for some LEDs which had to be visible in dark mining settings. A black potting compound would obscure these, and if the LEDs were left exposed at the surface of the encapsulation, they might not have the desired environmental protection.

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“We went through their requirements, and knowing that flame-retardancy was not needed for this application, we could suggest clear, unfilled potting options to form a second layer and keep the LED visible. Rotech tested two products, and had success with **Opti-tec 4200 Optically Clear Polyurethane Encapsulant & Potting Compound**,” explained Geerthsen.

“Although it’s a double process, two lots of potting, it’s a proper job now,” said Hoey. “That’s the difference between technical experts, who know what suitable potential products are out there, and trying to conduct this research on our own.”

A bountiful partnership

Rotech has multiplied its sales to the UK and South Africa as a result of expanded production. Its products have developed a reputation as reliable and cost-effective, and the epoxy orders continue to arrive at Rotech HQ in Cheshire on schedule.

“As well as technical expertise, manufacturers deserve partners who can help them develop the fulfilment and operational aspects of their business,” said Heydon. “The scheduled delivery function is particularly helpful in allowing customers to plan their year ahead.”

“You don’t often get a good sales team combined with a good technical team,” reflected Hoey. “They’re knowledgeable, the response time is great, and they give me peace of mind. As a manufacturer, that’s invaluable. I can’t think of a bad thing to say about them!”

IRS 2040-1 Epoxy Potting Compound

- Non-toxic general purpose flame retardant encapsulating compound
- High electrical insulating characteristics, good thermal conductivity
- Compatible with most PCB components and materials over a wide range of temperatures
- Cured at room temperature or with heat, with low cure shrinkage
- Excellent adhesion to most plastic and metal substrates

Applications include: Potting of electronic modules for on vehicle use. Potting of switches in the oil and gas industries, manufacturing, mining, marine and other extreme environments. Potting of electronic components and power supplies for specialist LED displays.

Opti-tec 4200 Optically Clear Polyurethane Encapsulant & Potting Compound

- Clear, water-white, non-yellowing, for encapsulation of electronics, LEDs, electrical products where high transparency and aesthetics are important.
- Excellent long term UV stability
- Cured at room temperature or with heat, with low cure shrinkage
- Scratch and mark resistant
- Non-toxic

Applications include: LED potting or LED encapsulation. Electronics potting. Dome coating of labels and badges. High quality, clear casting. Decorative giftware.



Contact us for more information on our
potting and encapsulation compounds

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