How we achive 40% Loading Rate in Oil Jerry Can Production with Customized PE Filler Masterbatch

In the competitive landscape of plastic manufacturing, optimizing material costs without compromising product integrity is a constant challenge. For Blow Molding applications, increasing the filler loading rate is a proven strategy for Cost-Saving Solutions. However, higher loading rates often lead to structural weaknesses if the material formulation is not perfectly matched to the production equipment.

This case study from a strategic partner in Southeast Asia illustrates how Mega Plast transforms technical challenges into operational success, ensuring high-performance results even at demanding loading rates.

Challenge: Balancing High Loading Rates with Structural Integrity

The client, a prominent manufacturer of plastic jerrycans, aimed to achieve a 40% filler loading rate to maximize cost efficiency. To facilitate this trial, Mega Plast provided an initial 300kg free sample of our standard Blow Molding grade, B204.

The initial trial yielded mixed technical results:

1. **Impact Resistance (Pass):**
The jerrycans successfully passed the Drop Test, surviving 20 consecutive drops without breakage. This demonstrated the material's excellent flexibility and toughness.

2. **Structural Stiffness (Fail):**
The product failed the Top Load Test. Under vertical weight pressure (simulating warehouse stacking), the cans deformed and lost their shape.

Blending	Weight (Gram)			Result	
				Topload	Droptest
	Standard	Actual		Std 4.11 – 4.43 Bar	Std 8x
		Topload	Droptest		
HDPE Marlex Filler 204 Colorant	990 – 1010	Cav 18 (1010) Cav 19 (1007)	Cav 18 (1008) Cav 19 (1005)	Failed	OK

The technical conclusion was clear: While Grade B204 offered sufficient flexibility, it lacked the necessary stiffness to support the client's specific container design at a 40% loading rate.

Strategic Intervention: Commitment to the 40% Target

In many industry scenarios, the standard advice for such a failure would be to reduce the filler loading rate. However, Mega Plast recognized that maintaining the 40% target was essential for the client's commercial success.

Rather than compromising on the loading rate, our technical experts immediately flew to the client's factory to solve the problem directly.

The 4-Step Technical Optimization Process

Data Analysis

We reviewed the test results to understand why the impact resistance was good but the stiffness was low.

On-Site Audit

Mega Plast inspected the production line. We recorded specific machine parameters including temperature, blowing pressure, and cycle times.

Sample Comparison

Our team collected samples of both the deformed cans and good cans to analyze the structural differences.

Formula Customization

We used this data to engineer a new grade called B204A. Our R&D team utilized Lab-tested formulation methods to increase stiffness while maintaining impact strength.

Proof: Uncompromising Performance & Profit

We conducted a second trial with the new grade B204A using the recorded machine settings.
The results met all technical specifications:

Top Load Success	Target Loading Achieved	Operational Stability
The jerrycans remained rigid and maintained their structural integrity under stacking pressure, eliminating the deformation issue.	The client successfully maintained the 40% loading rate, preserving their projected cost savings.	The material processed smoothly, ensuring consistent cycle times and product quality.

Conclusion:

A standard product specification may not always align with the unique variables of every production line. True value lies in a supplier's ability to adapt and engineer materials that fit specific manufacturing requirements.

At Mega Plast, we provide more than just raw materials; we deliver Customized Solutions backed by deep technical expertise and 21 years of experience . We are dedicated to ensuring your production targets are met.

Download
The Detailed Case Study

This story of Jerry cans Manufaturer is clear proof: with the right partner and the right material solution, any production challenge can be overcome. Are you facing similar issues in your manufacturing process?

CONTACT US TODAY

Contact Mega Plast to discuss a technical assessment for your production line

Nhat Huy Group is a pioneering manufacturer and exporter of plastic products in Vietnam, established in 2004. We offer a range of high-quality products including mineral powder, filler masterbatch, and PVC compound, serving global markets. Committed to innovation and improvement, Nhat Huy Group is dedicated to providing sustainable, efficient, and environmentally friendly plastic solutions, contributing to community and societal development. Our team of experts is always ready to deliver products and services that meet international standards, ensuring maximum satisfaction for our customers.

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