Process Considerations for Cryogenic Shipping

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Overview

• Kite’s Supply Chain
• Liquid Nitrogen (LN2) Safety
• Label Adhesion
• Primary Container Integrity
• Supply Chain Partners
Common Applications of LN2

...according to Hollywood

Jurassic Park

Terminator 2
Kite’s Supply Chain

- Refrigerated Apheresis Shipment
- Retroviral Vector (RVV) Shipment
- Dry ice
- Manufacturing Process
- Cryogenic (LN2) Final Product Shipment
LN2 Safety

PPE

Dry Vapor Shippers

Charging Process
Label Adhesion

Materials

Adhesion Qualification

Label Application
Primary Container Integrity

Materials

Shock and Vibration Testing

Handling
Supply Chain Partners

- Relationships
- Training
- Quality Agreement
Cryogenic shipping presents some unique challenges:

- Liquid nitrogen can be dangerous if not correctly controlled
- Labels may have adhesion issues if not sufficiently designed and tested
- Packaging may fail if not sufficiently designed and tested
- Logistics may break down if not closely monitored
any questions?