

**HUNTSMAN**

Enriching lives through innovation

**RESTRICTED  
AREA**

**AUTHORIZED  
CLEAN ROOM  
PERSONNEL ONLY**

# E-GRADE<sup>®</sup> Purification & Packaging Unit



# E-GRADE® Unit Capabilities

Huntsman is one of the world's largest producers of amine chemistries with over 20 years of experience servicing high-purity, high-quality needs of the semiconductor industry, including formulations of advanced cleaning chemistries. Our new E-GRADE® unit located in Conroe, Texas offers capabilities for blending, product purification, advanced analytical testing, and cleanroom packaging. We can process either Huntsman-made products or most materials manufactured by non-Huntsman sources, enabling easier product handling, improved quality and supply reliability, and purification and packaging services. Our Research & Development purification facility in The Woodlands, Texas fosters partnerships for product development — from samples to high-volume commercialization.

## Features

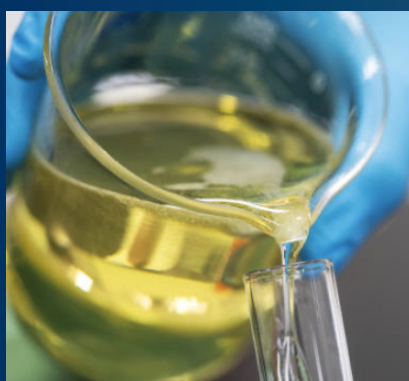
1. **Blends** in partial blends, tolling, private label
2. **Particle filtration**
3. **Trace metals reduction**
4. **Handling challenges** with viscosity, freezing point, solids, low flash point, small batch variability
5. **Supply chain onshoring and stability** in sourcing from a US location and Business Continuity Planning (BCP)



**HUNTSMAN PRODUCTS**  
(amines, solvents)



**NON-HUNTSMAN PRODUCTS**  
(glycols, solvents, and amines)



## BLEND

Dilution addresses viscosity, freezing points, flash points

- Mixing products for master batches, tolling, private labeling

## PURIFY

Removal of metal ions and particles

- Particle filtration down to 0.1  $\mu\text{m}$  or less
- Trace metal reduction to low ppb





## CASE STUDY



**CHALLENGE:** A customer was experiencing supply reliability issues and was unable to obtain a key raw material. The raw material had a history of inconsistent quality, and they needed an alternate supplier with improved quality and minimal lead time.



**SOLUTION:** Huntsman applied their purification and processing expertise to create a custom blend and reduce the trace metals for a non-Huntsman product and rapidly offered a higher quality product that was easier to handle.



**RESULT:** The customer received a customized component, meeting the purity and consistency requirements for end-use application, avoiding a shutdown in production while improving their business continuity plan.



## ANALYZE

State-of-the-art equipment to assess product specifications

- Agilent 8900 ICP-MS
- Rion KS-42AF particle counter
- Gas chromatography
- Ion chromatography

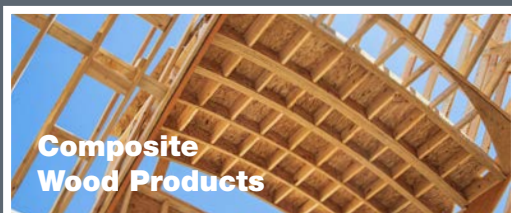
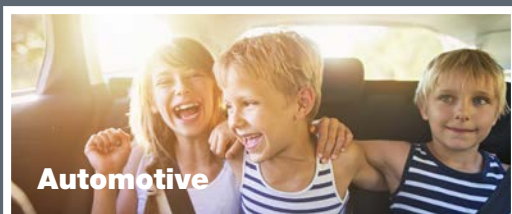


## PACKAGE

High-grade, high-purity controlled clean room environment maintains product quality during packaging

- ISO 6 or better
- Drums and IBCs
- N<sub>2</sub> sparging and padding
- Fully automated packaging and wrapping

We offer solutions in  
a variety of markets:



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