

# Cardolite Corporation

Hungarocoat  
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**Cardolite**  
Chemistry for Tomorrow



# Contents

- Company Overview
- Global Presence
- Product Offering



# Cardolite

- Over 35 years developing and supplying high quality specialty chemicals for downstream markets globally
- USA-based with approximately 300 employees worldwide
- Leader in renewable, cashew nutshell liquid (CNSL) technology
- Cardolite uses CNSL derivatives as key building blocks for most of its products to achieve unprecedented performance that solves today's problems in a sustainable manner

## Cardolite Overview



Harvel Corporation and Irvington Varnish and Insulator

1926

1953

3M acquires Irvington V&I and it's New Jersey plant.



3M sells Newark factory to existing management.




1984

### Last 35 years...

Cardolite focused primarily on CNSL-based epoxy curing agents, epoxy diluents and modifiers, polyols and friction products.

# Cardolite History



-  Sales, R&D, and Management
-  Sales, R&D, and Manufacturing
-  Sales



# Global Presence

# Manufacturing



- The most advanced CNSL plants in the world
  - Zhuhai, Guangdong, China built in 2004
  - Mangalore, India built in 2013
- Products
  - Epoxy and polyol resins and modifiers
  - Epoxy curing agents
  - Friction particles and resins
  - CNSL Intermediates
- Close to strategic ports
- Warehouse and tank storage
- 24/7 operation
- State of the art QC, R&D and technical service laboratories
- Administrative offices

# Health, Safety & Environment



\*OHSAS18001, ISO14001, ISO50001 Zhuhai only

- All Cardolite facilities strive to meet the highest standards of safety, environment, and quality control.
- Cardolite has evergreen programs built around ISO certifications to measure, control, and improve manufacturing capability from a quality and HSE perspective.
- Cardolite fosters an open dialogue with employees, customers, communities, and other stake holders.
- Employees are trained to protect themselves and the environment.



# New U.S. Headquarters

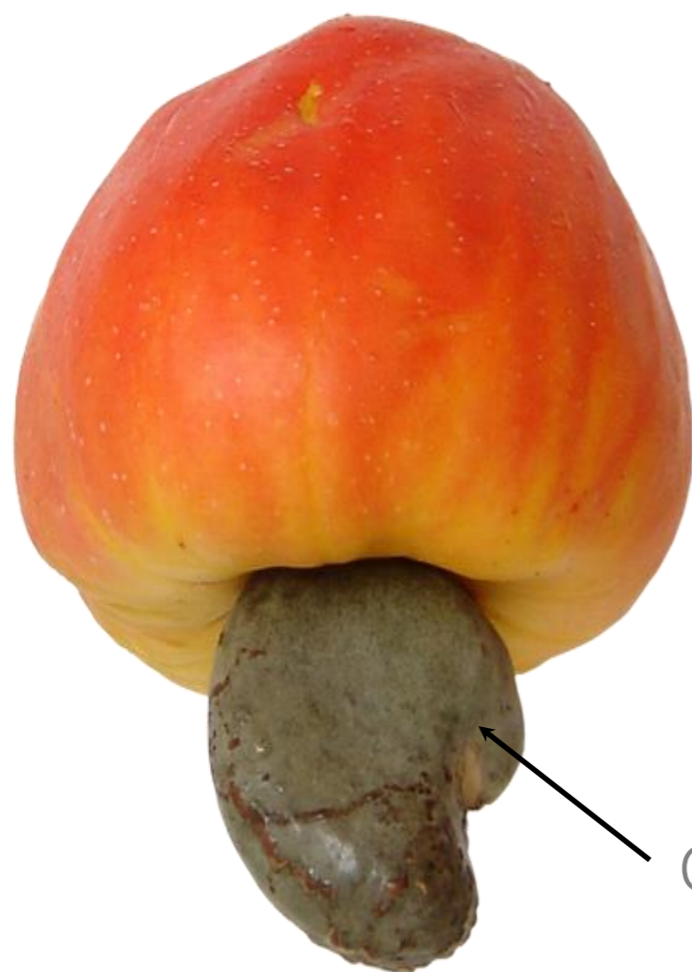
- Located in Bristol, PA
- Home to
  - Research and Development
  - Technical Service
  - Corporate Finance
  - Customer Service
  - Regulatory
  - Marketing
- New state-of-art laboratories for Research and Development and Technical Service
- 30,000 sqft climate-controlled warehouse fully integrated with global network through new customized ERP system
- About 25 dedicated scientists with more than 200 years of combined industrial experience
- Other R&D: Mangalore, India  
Zhuhai, China





# Product Line Overview

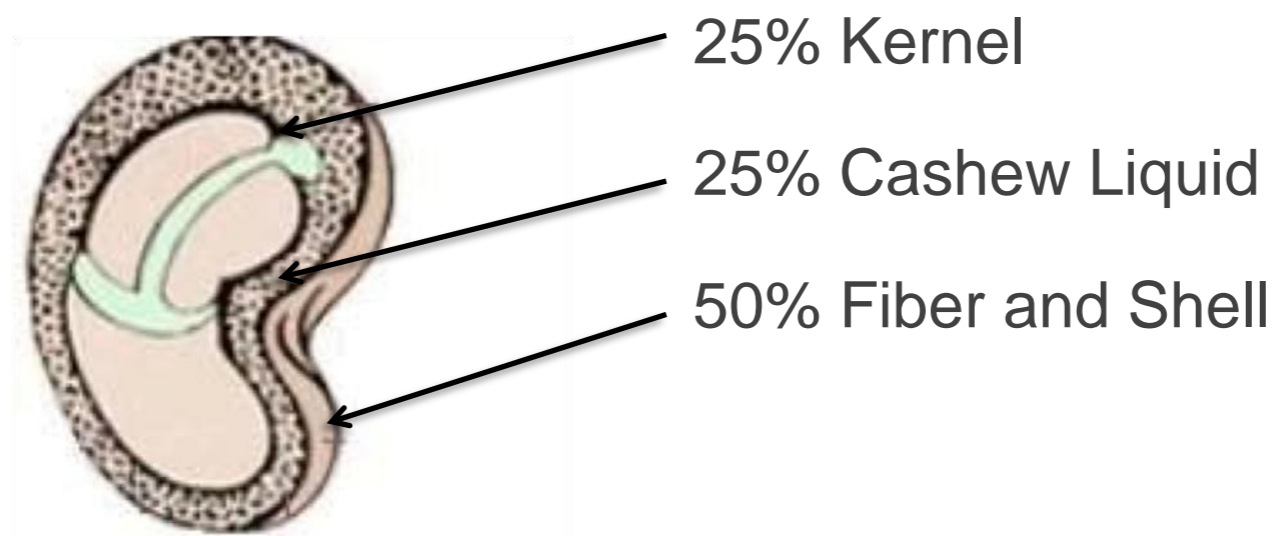




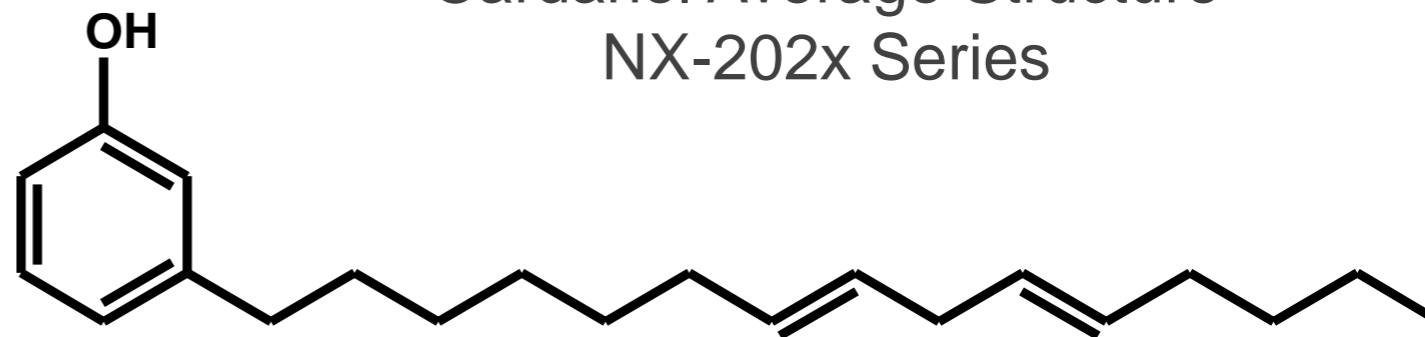
Cashew  
Nut



Most Cardolite products are made **from cashew nutshell liquid (CNSL)** - a naturally occurring, renewable oil from the shell of the cashew nut. This material does not interfere with the food chain as it is manufactured as a by-product of the nut industry mainly in Brazil, India, and Vietnam.



Cardanol Average Structure  
NX-202x Series

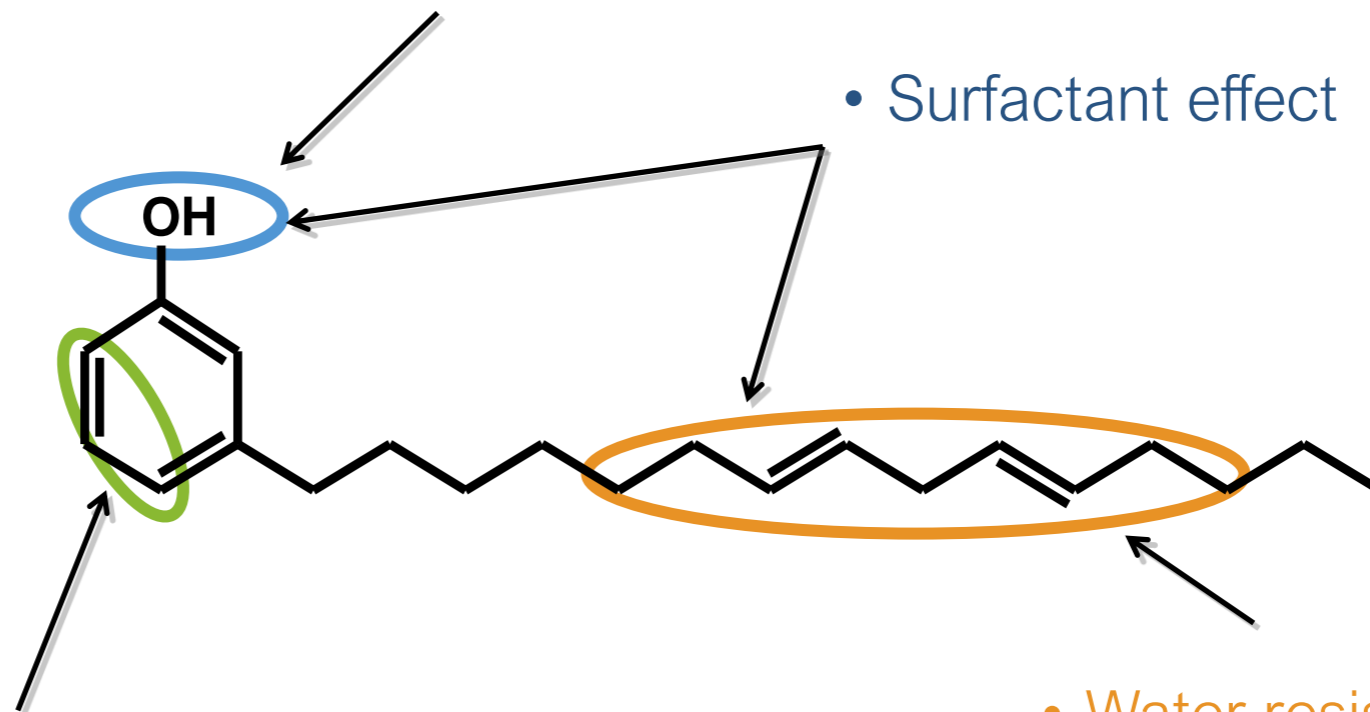


CNSL is approximately 25% of the cashew nut by weight. The primary component of CNSL is cardanol, a natural phenolic compound with a long aliphatic side chain that provides unique properties. Our **cardanol** product line, the **NX-202x Series**, has earned the **USDA Certified Biobased Product** label.

# Average Structure and Benefits

- Fast cure
- Low temperature
- Adhesion

- Surfactant effect



- Thermal and fire resistance
- Chemical resistance

- Water resistance
- Moisture resistance
- Low viscosity
- Flexibility
- Surface tension
- Wetting properties





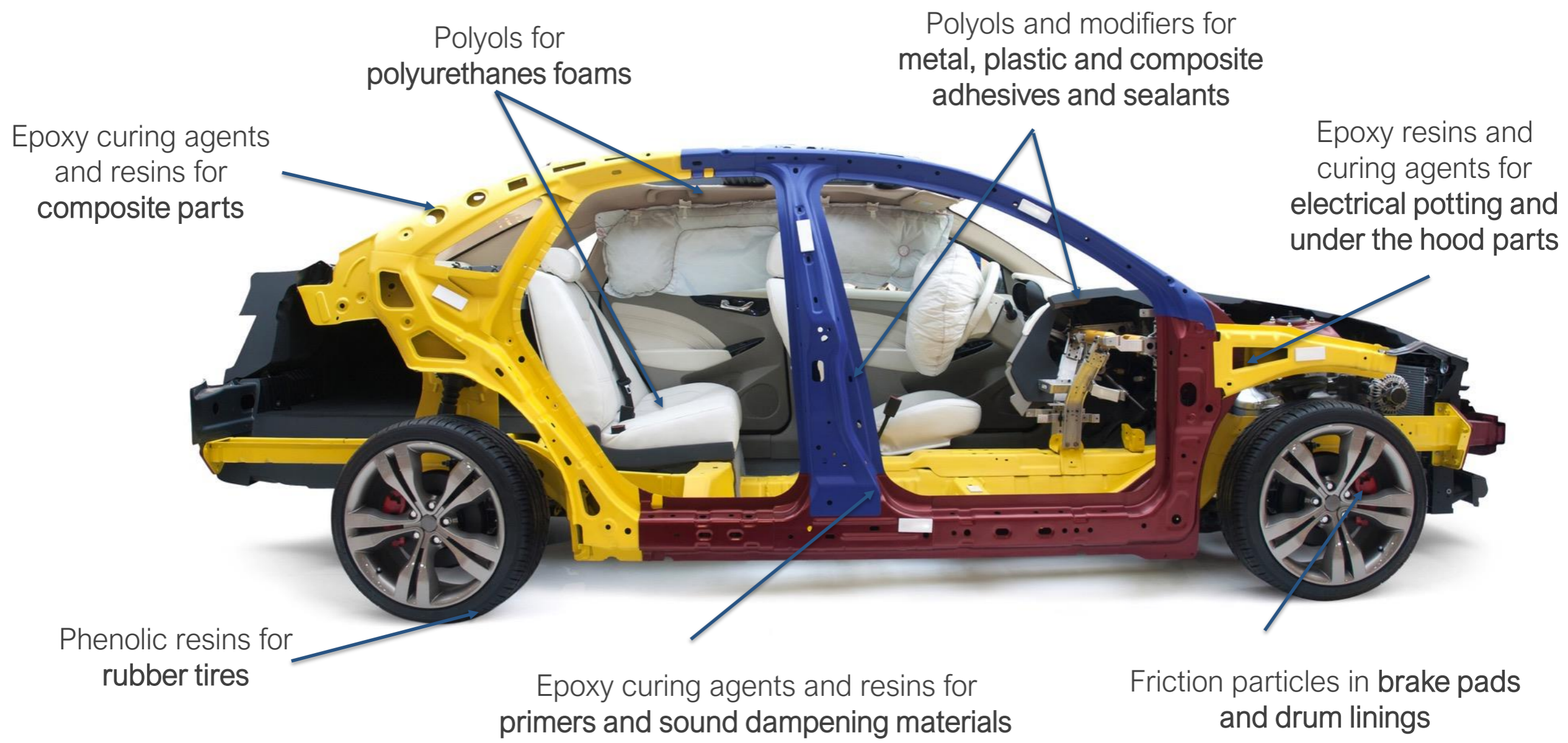
# Product Lines

- Epoxy Curing Agents
  - Phenalkamines
  - Phenalkamides
  - Polyamides
  - Modified Cycloaliphatic Amines
- Epoxy Resins and Modifiers
- Reactive and Non-reactive Epoxy Diluents
- Hydrocarbon Resins
- Polyol and Diol Resins
- NCO Blocking Agents
- CNSL-based Silanes
- CNSL-based (Meth)acrylates
- CNSL-based Surfactants
- Friction Products
  - Brown and Black Particles
  - Resins
- CNSL-based Specialties
- FormuLITE™



# Markets

- Coatings
  - Marine & Protective
  - Industrial and OEM
  - Transportation
  - Concrete Flooring
- Adhesives
  - Construction
  - Transportation
  - Electronics
  - Casting and Potting
- Composites
  - Prepreg, RTM, Hand lay-up
- Automotive brake pads, drum linings, and train blocks
- Rigid and Flexible Foams



# Cardolite In Your Car



# THANK YOU !

- Hans Carleer - Sales Manager  
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