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EMC Overview

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Summary

Air Liquide America Corporation is a world leader in industrial gases and technology.

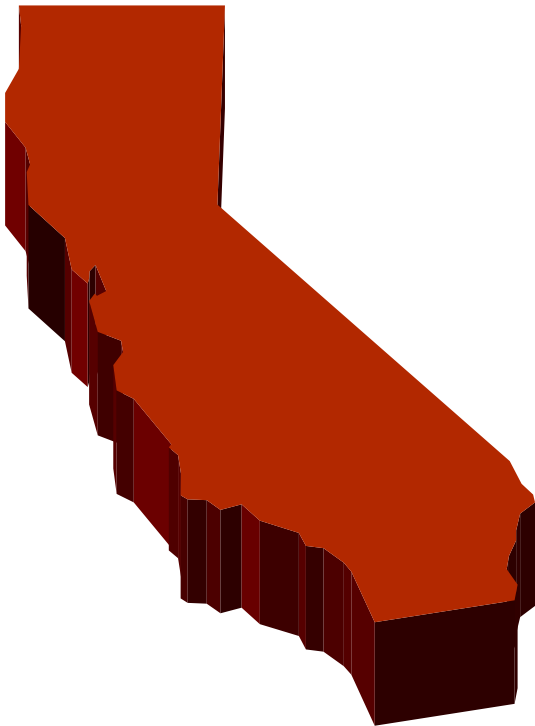
What does Air Liquide Offer?



- Creative solutions
Customized solutions to business issues deliver cost-effective results
- Customer knowledge
Solutions are built on a solid foundation of knowledge, service and practical experience
- Products and Services
This is the raw material from which Air Liquide produces tangible solutions
- Innovative People
A team of specialists directed by one individual focused on helping the customer succeed
- Success
A total commitment points the way to success

Summary, cont'd

- Air Liquide America Corporation
- Air Liquide Electronics
- Equipment Manufacturing Center (EMC)
 - ◆ Primarily focused on providing the electronics and semiconductor industries with leading-edge equipment and technology for gas delivery systems and services
 - ◆ Manufacturing, Sales, Marketing and Design, Fremont, California
 - ◆ Service Support Center, Fremont, California



EMC History

American Specialty Gas Technologies:

- Founded by American Welding Supply, 1981
- First pneumatically-driven gas manifold, 1985
- Acquired by Liquid Air Corporation, 1989
- Integrated with Liquid Air Corporation, 1992
- Liquid Air changed to Air Liquide America, 1994
- Air Liquide – ASGT named Equipment Technologies Group, 1994

Roadmap



- Air Liquide Electronics defined the next generation of products, technology and services based on industry and technology trends identified by the SIA, SEMI and other industry research organizations
- Extending as far as 2005

Worldwide Design Team



- Utilize engineers from U.S., Japan and France for continuous improvement
- Develop standardized gas systems
- Apply common procedures for manufacturing sites in each zone
- Benefit from EMC factory located in the Silicon Valley

Global Standards

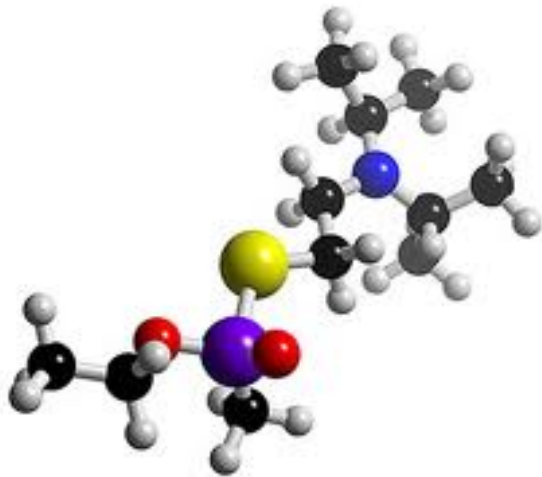


Standardization Goals Include:

- Controls
- Hardware
- Software
- Enclosures
- Aesthetics
- Manufacturing
- QA/QC

Component Evaluation

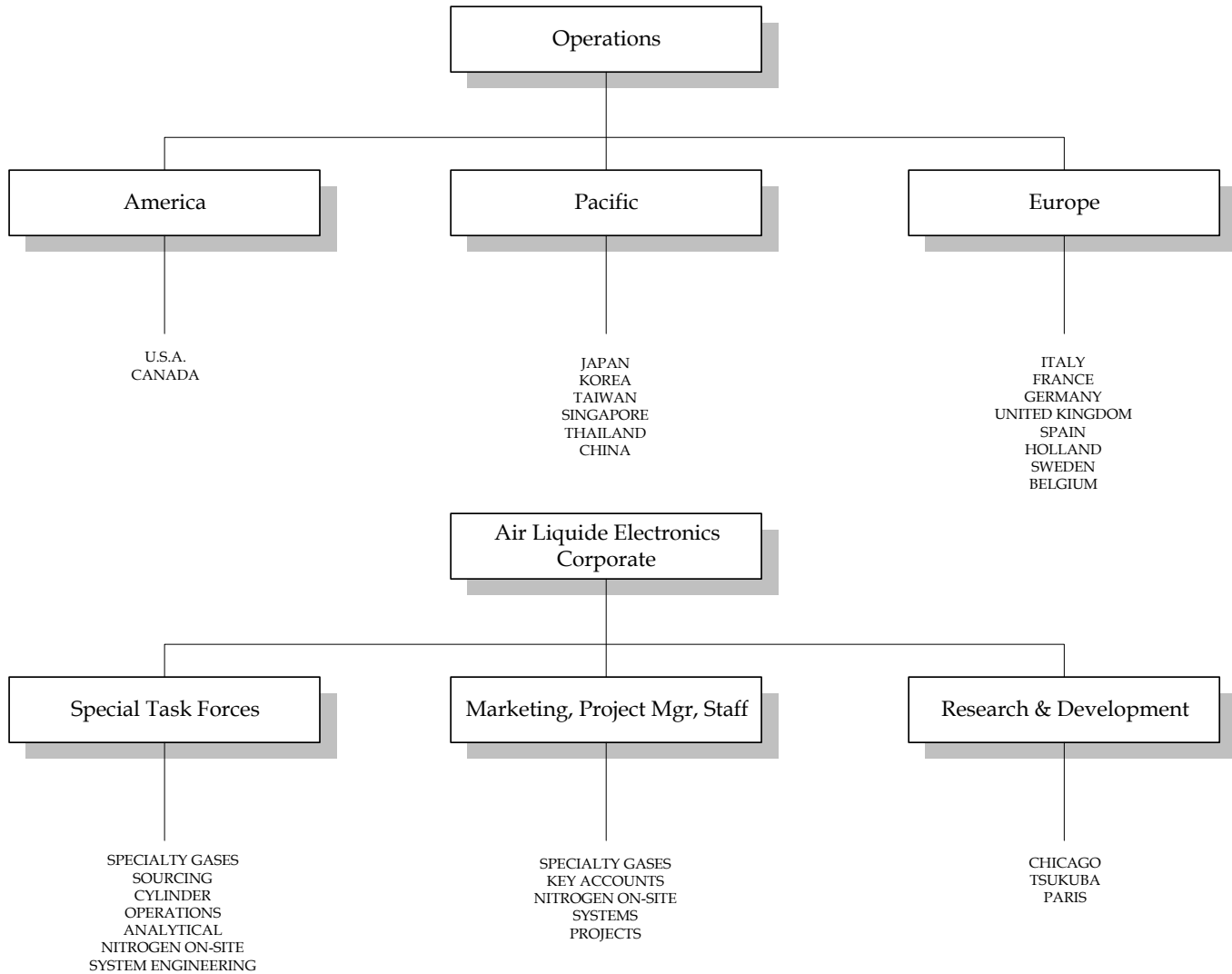
- Procedures were developed by Air Liquide R&D at Chicago Technology Center
- Evaluation data is utilized internally for gas panel standard component selection such as valves, regulators, filters, etc.
- Evaluations include:
 - ◆ Particle
 - ◆ Chemical interaction
 - ◆ Purgability
 - ◆ Performance



Gas Panel Purgability Studies

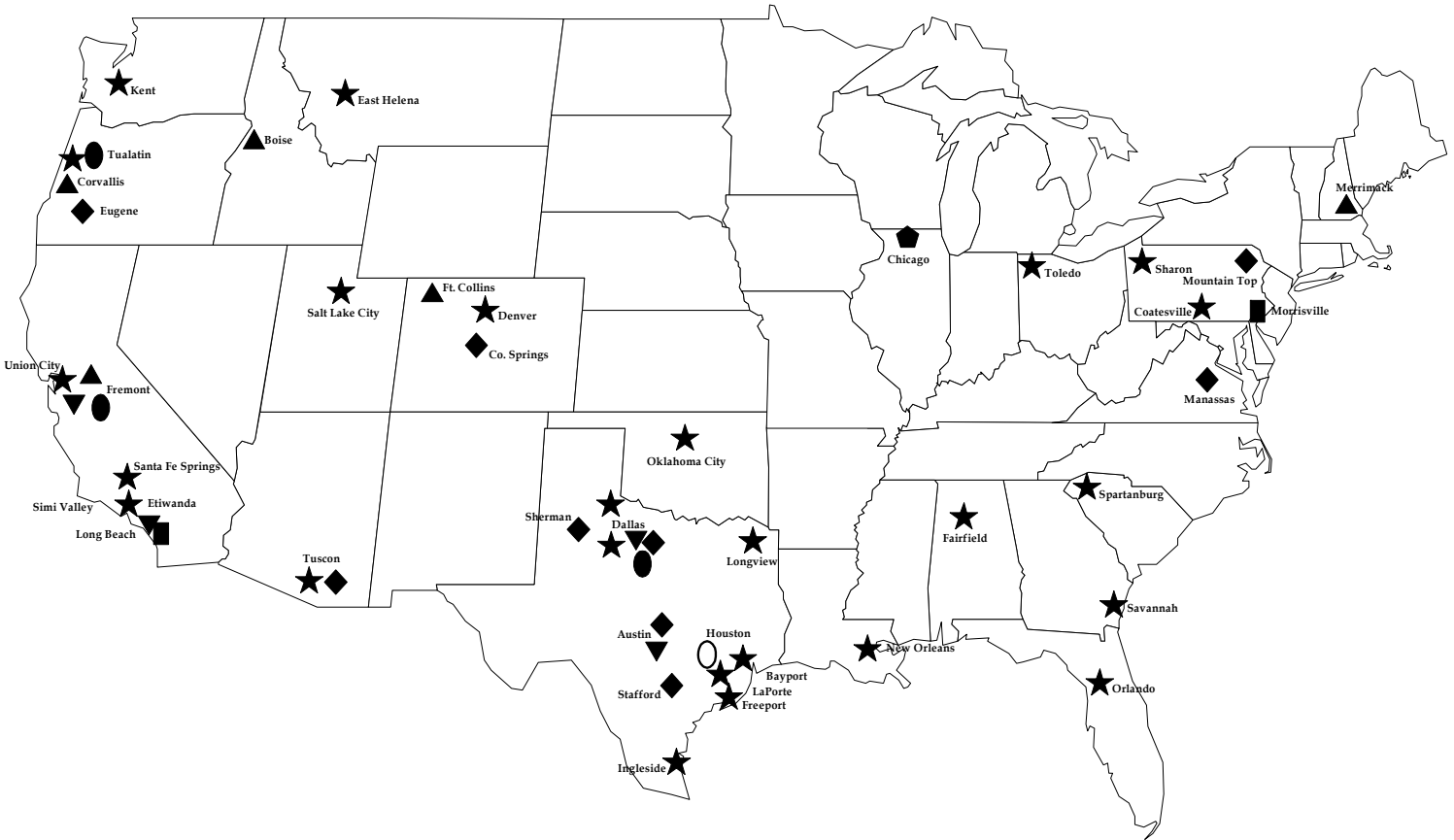
- Moisture
- Hydrogen Chloride (HCl)
- Performance of Reduced Purge Volume design versus conventional design

Air Liquide Electronics Worldwide Organization



Air Liquide Electronics

US Operations



- | | | | |
|---|---------------------------------|---|--------------------------|
| ★ | MAJOR AIR SEPARATION PLANTS | ▲ | APSA MINI ON-SITE |
| ■ | ELECTRONIC SPECIALTY GAS PLANTS | ◆ | RESEARCH AND DEVELOPMENT |
| ▼ | DISTRIBUTION CENTER | ◆ | ELECTRONICS ON-SITE |
| ● | EQUIPMENT MANUFACTURING CENTER | ○ | CORPORATE HEADQUARTERS |

Customer Locations

