

Armstrong & Associates 3PL Case Study

Rinchem Company, Inc.

Glass Pipeline for Global Chemicals Logistics

Albuquerque, New Mexico USA

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By Kurt Baumann

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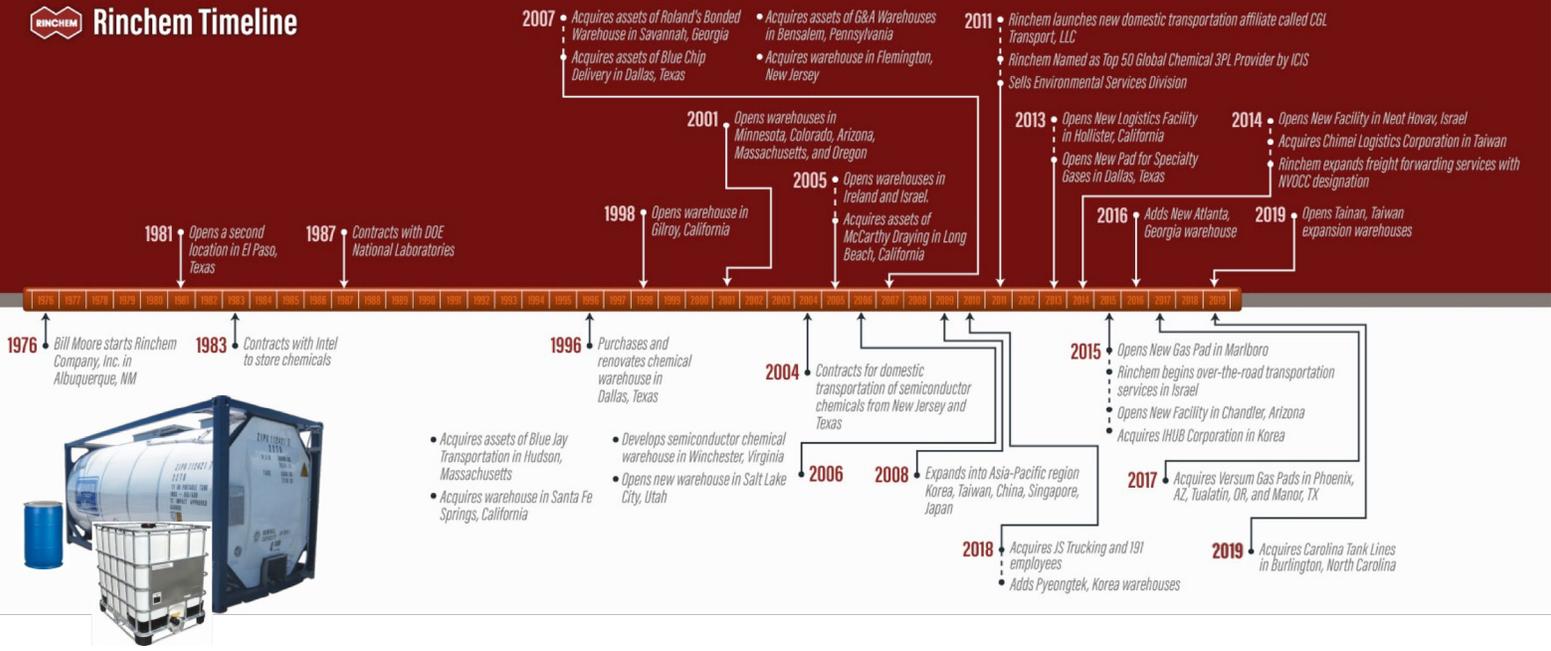
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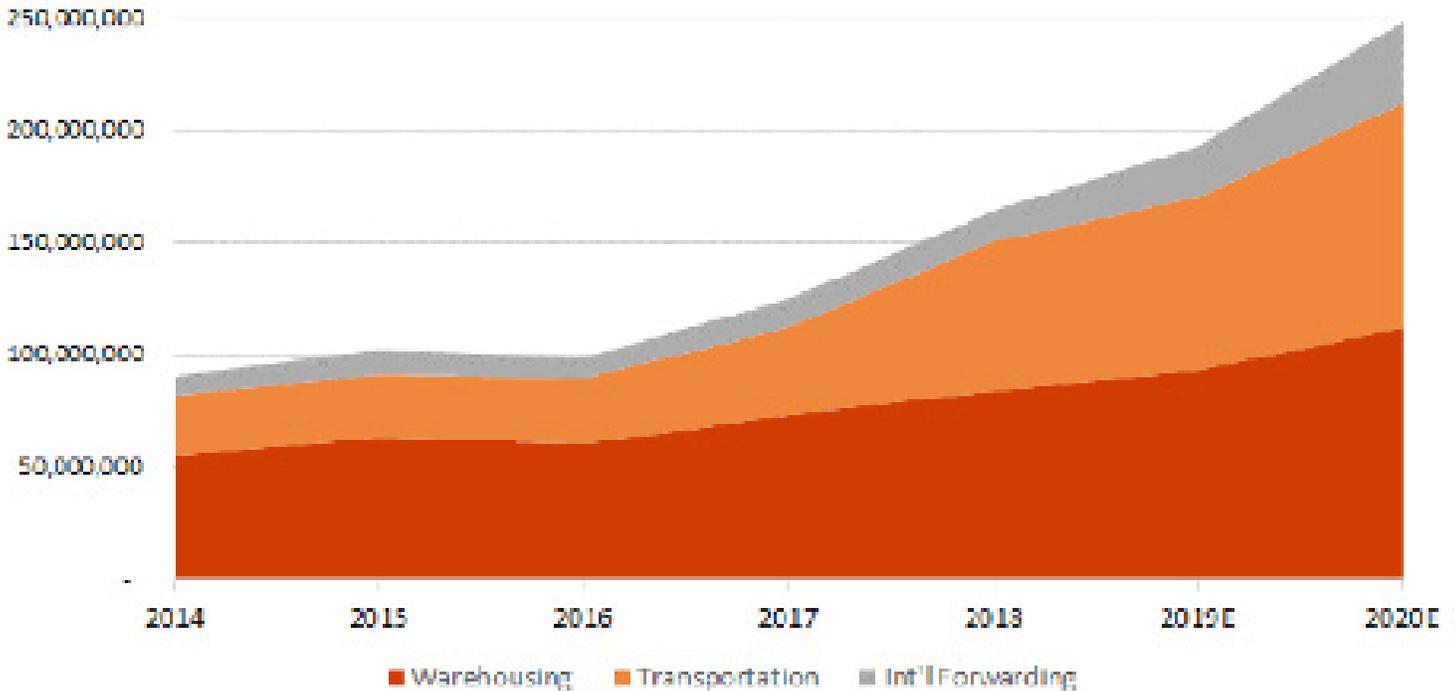


Niche Strategy to Replenish Chemicals for Manufacturing

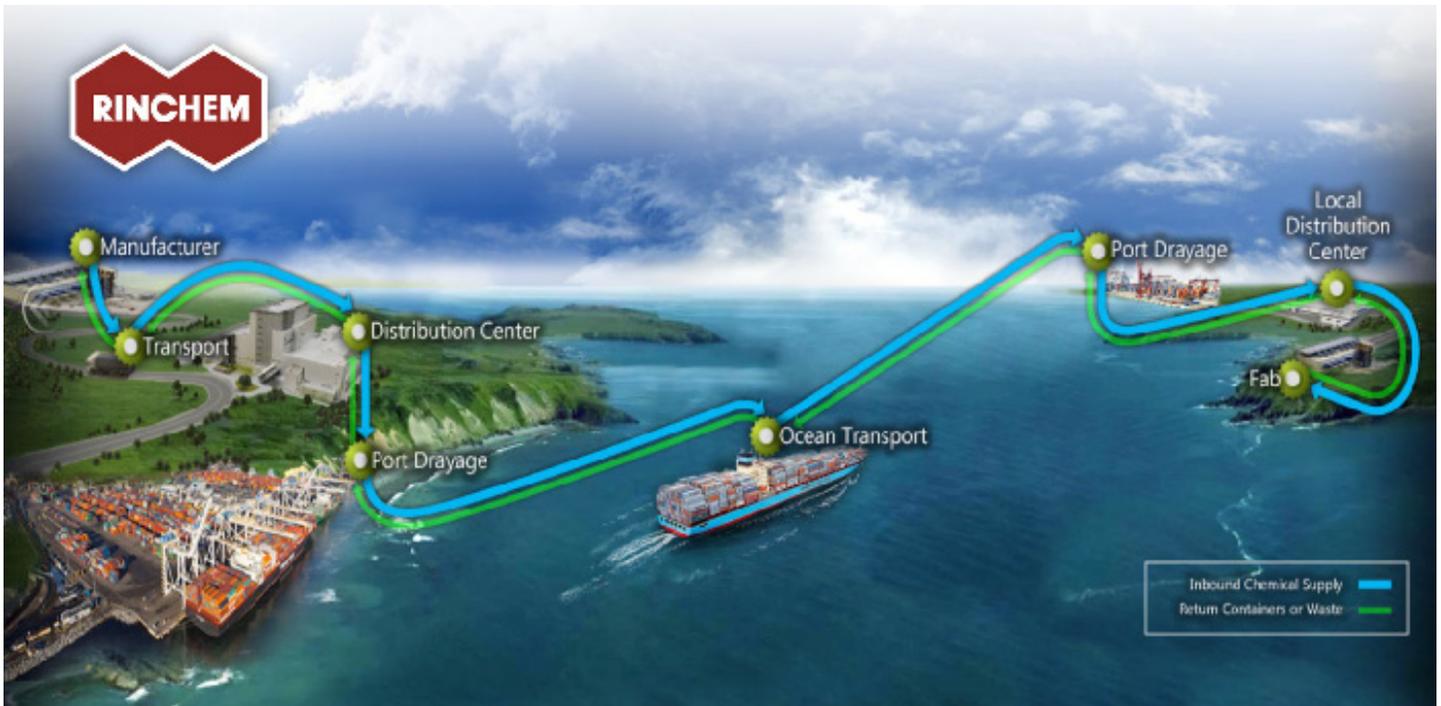
In 1976, Bill Moore established a second location in Albuquerque, NM for an Arizona chemicals distributor and ran the two-person business supplying general chemicals to a variety of industries, including paint and fiberglass manufacturers. Mr. Moore purchased the Albuquerque location in 1983. Over four decades, Rinchem has grown and transformed into a global third-party logistics (3PL) provider with trucking assets and 1,000+ employees providing end-to-end supply chain logistics services with specialization in replenishing chemicals for manufacturing. From the producer to the end-user, Rinchem excels at transporting, storing and handling prepackaged specialty chemicals and gases.

Over the past five years, Rinchem experienced significant revenue growth at a 16.3% compound annual growth rate, driven by a series of facility additions and acquisitions in the United States, Taiwan and Korea.

Revenue Growth per Service Type



Rinchem's End-to-End Global Supply Chain Services



With locations in North America and in parts of Asia, Europe, and the Middle East, Rinchem utilizes its network of customized, temperature-controlled warehouses and transportation assets to provide safe and efficient chemical management solutions. Rinchem is a single source that can manage the entire global chemical supply chain to reduce costs and risks while providing continuous visibility to inventory and shipments. As a Lead Logistics Provider (LLP), Rinchem offers integrated logistics services for fabricators and chemical producers.

Fabricator Services: When a *finished goods manufacturer* needs help to provide chemicals storage and just-in-time (JIT) replenishment to a plant from multiple vendors, Rinchem sets up a warehouse or merges the new customer into a multi-client facility close to the plant, as well as provides a full range of transportation services.

Chemical Producer (or Distributor) Services: When a *chemical producer* needs help to distribute chemicals to multiple manufacturing customers in a geographic area or position and replenish vendor-managed inventory (VMI), it will store the producer's chemicals in a Rinchem location that is optimal for its distribution network and required service level. Rinchem's customers include leading chemical producers such as Dow, KMG and Merck. Since Rinchem does not own or sell chemicals, it is a neutral third-party that allows chemical producer competitors to use Rinchem's services with confidence.

Both customer types require **reverse logistics** support to return reusable containers like totes and ISO tanks.



Lead Logistics Provider (LLP): Is the coordination of all logistics related activities and suppliers, including analysis of and recommendations regarding modes of transport, opportunities for consolidation, customer service performance levels and opportunities for improvement of the supply chain.

3PL Value-Added Warehousing & Distribution (VAWD): Provides public or dedicated, temperature-controlled or ambient, regulated or non-regulated warehousing and handling of high purity, pre-packaged chemicals, gases and other materials in ISO 9001:2008 certified warehouses.

3PL Domestic Transportation Management (DTM): Is the intermodal, over-the-road transportation, cross docking or local delivery of wet or dry chemicals in bottles, cases, drums, totes, ISO tanks and specialized containers. Rinchem also provides Freight Audit & Bill Pay services and procurement capabilities, if needed.

Asset-Based Trucking: Rinchem operates a bonded carrier fleet of 333 tractors, 400 specialized trailers and 150 ISO tank chassis for local, 24-hour, JIT delivery, and over-the-road transportation. It has licensed and bonded drayage services to and from the ports of Portland, Los Angeles, Houston, Savannah, Philadelphia, Boston and Newark. Rinchem's fleet continues to expand with acquisitions such as IHUB and JS Trucking in Korea, Chimei Logistics in Taiwan, and Carolina Tank Lines in the United States.

Rinchem's fleet is HM-232 (hazardous materials) certified and operates in compliance with federal, state and local laws and regulations. **Safety features include:**

- Temperature control
- Emergency spill containment equipment
- Vapor vents and skylights
- Rigid door frames and air ride suspension
- Double E-track load locks
- Sealed floors
- Secondary containment dams
- GPS and on-board computers

3PL International Transportation Management (ITM):

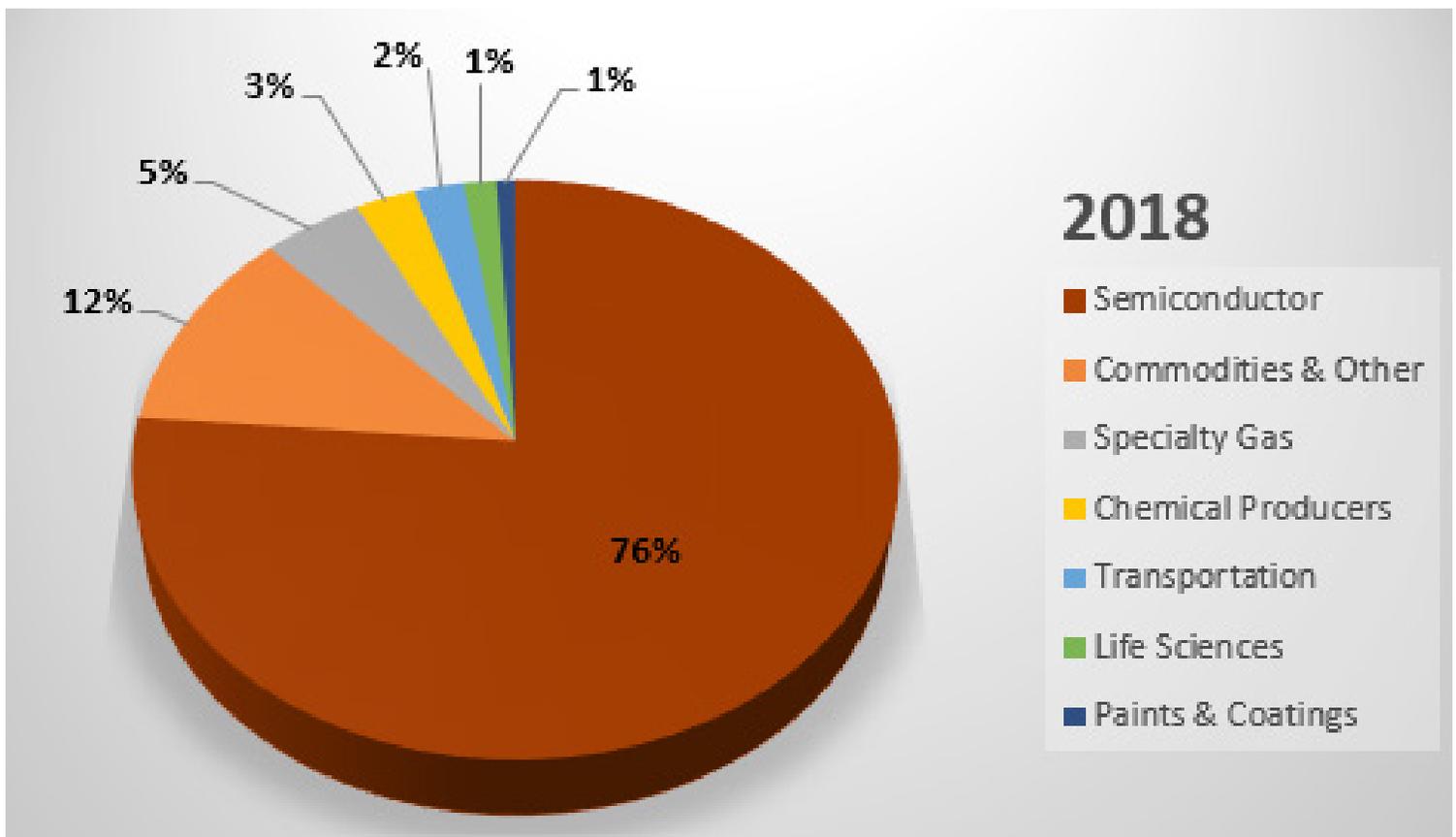
Rinchem operates as a nonvessel operating common carrier (NVOCC) (2015). It has established relationships with major ocean carriers, ground carriers and local authorities; all with teams specializing in the movement of hazardous materials. Rinchem has also developed a vast network of agents that are strategically located worldwide. Additional services include:

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- Door-to-Door Service (in most countries)
- Vessel Charter and Part-charter Services
- Hazardous Declaration Creation (MSDS & POA Required)
- Letter of Credit and Bank Draft Banking
- Chambered and Legalization of Documents
- Customs Clearance Services
- Cargo Insurance

Building on a Solid Footing in Semiconductor to Expand Customer Industries

In 1983, Rinchem landed a contract with a major semiconductor manufacturer to store and continuously replenish specialty chemicals for making wafers. The Semiconductor industry remains a dominant customer vertical for Rinchem, accounting for 76% of revenue. General commodity manufacturers using chemicals for processing make up the next largest share at 12%. Rinchem's growth plan includes further development of promising customer industries, including Specialty Gas, Chemical and Life Sciences companies.



Rinchem's expertise as a premier hazardous cargo logistics provider is applicable across a myriad of industries and diverse transportation requirements. **It ships the following classes of materials:**

- General, non-hazardous cargo
 - Temperature Controlled; non-hazardous and hazardous
 - Hazardous Materials
- ◇ **Class 2** Gases
 - ◇ **Class 3** Flammable Liquids
 - ◇ **Class 4** Flammable Solids
 - ◇ **Class 5** Oxidizing Substances and Organic Peroxides
 - ◇ **Class 6** Toxic and Infectious Substances
 - ◇ **Class 8** Corrosives
 - ◇ **Class 9** Miscellaneous and Marine Pollutants

Strong Domestic Operations & Expanding Global Presence

Rinchem operates 1.4 million square feet of temperature-controlled, hazardous materials-compliant warehouse space in a broad network of 24 locations across North America, Europe, the Middle East and Asia. The company operates a fleet of 333 tractors, 400 temperature-controlled, hazmat-customized trailers and 150 ISO tank chassis domiciled at these facilities providing drayage, shuttle and local delivery services.



Whse	Country	State	City	Region	Chemicals	Gases	Quartz	Cleanroom	Square Feet	Employees (Less Drivers)	Customers Served	Pallet Spaces
1	USA	AZ	Chandler	U.S. Southwest	x	x	x	x	70,000	29	22	10,000
2	USA	AZ	Phoenix	U.S. Southwest		x			22,000	2	6	116
3	USA	CA	Hollister	U.S. Northwest	x	x		x	70,000	10	33	5,052
4	USA	CA	Santa Fe Springs	U.S. Southwest	x	x			40,000	11	22	2,566
5	USA	CO	Colorado Springs	U.S. Southwest	x	x		x	21,126	1	18	1,311
6	USA	GA	Garden City	U.S. Southeast	x	x		x	96,000	9	15	6,125
7	USA	GA	Decatur	U.S. Southeast	x				80,000	5	5	5,754
8	USA	MA	Marlboro	U.S. Northeast	x	x		x	60,000	19	18	6,675
9	USA	MN	Eagan	U.S. Midwest	x			x	26,179	4	14	1,287
10	USA	NJ	Flemington	U.S. Northeast	x			x	79,500	22	14	8,000
11	USA	NM	Albuquerque	U.S. Southwest	x	x	x	x	36,820	6	11	2,442
12	USA	OR	Hillsboro	U.S. Northwest	x	x	x	x	80,000	34	18	8,649
13	USA	OR	Tualatin	U.S. Northwest		x			11,000	2	3	163
14	USA	PA	Bensalem	U.S. Northeast	x				230,000	16	1	17,515
15	USA	PA	Bensalem	U.S. Northeast	x	x			80,000	26	16	10,080
16	USA	TX	Dallas	U.S. Southwest	x	x			80,600	8	33	4,894
17	USA	TX	Buda	U.S. Southwest	x			x	40,000	5	22	3,187
18	USA	TX	Manor	U.S. Southwest		x			7,500	1	5	125
19	USA	UT	Salt Lake City	U.S. Southwest	x	x		x	24,633	10	22	3,188
20	USA	VA	Winchester	U.S. Northeast	x	x			12,000	3	12	710
	US Domestic								1,167,658	226	310	97,932
21	Ireland	Dublin	Walkinstown	Dublin					1,650	3	1	81
22	Israel	Israel	Be'er Sheva	Israel	x	x	x	x	118,908	24	10	15,599
23	South Korea	Gyeonggi-do	Pyeongtaeksi	Korea	x	x	x		63,162	20	29	12,350
24	Taiwan	Taiwan	Tainan City	Taiwan	x	x			62,379	13	30	9,160
	International								246,699	60	70	37,190
24	Total								1,414,357	286	380	135,122

Rapid Deployment of Tecsys WMS for Scalability & Digital Transformation

Warehousing is a core component of Rinchem's logistics services platform, comprising 48% of revenue. In 2017, the company realized the need to upgrade its warehouse management system (WMS) capabilities as the centerpiece for accurate and timely replenishment of chemicals to manufacturing.

Rinchem realized that the legacy system had reached a practical limit and was not scalable to match the growth rate of the company. Upgrades had become overly complex and resource intensive. It could not accommodate an increasing need to incorporate business rules and required technical modifications, rather than configuration by business users. The legacy system lacked the robust and durable integration methods required as part of Rinchem's intended digital transformation.

Rinchem conducted a formal WMS selection process based on these criteria and important features, such as:

- Product classification and critical safety handling rules for hazmat
- Directed put-away to maximize space utilization
- Rules for storage based on temperature and weight
- Dynamic picking based on first expired, first out (FEFO), lot control and serialization
- Control procedures to ensure inventory and pick accuracy
- Perishability monitoring
- Integration with web services, and application program interfaces (APIs) for integration

In addition, based on expanding international operations, Rinchem needed a system that was multi-lingual and ideally could provide visual cues, such images of products delivered to wireless devices.



Rinchem selected **Tecsyst WMS** based on these criteria and initiated a program to implement and rapidly deploy the system across 24 sites with four of them overseas. It partnered with Tecsyst to implement five facilities based on unique product storage and handling requirements. During these initial implementations, Rinchem established an internal team with operational expertise to learn the technical skills from Tecsyst required to roll-out the WMS across the network. In 2018, 16 warehouses were successfully deployed. This expedited schedule was critical to standardizing operational processes, integrating with key customers, and providing enhanced visibility in the supply chain. With all sites utilizing the upgraded WMS, Rinchem has been able to improve safety, accuracy, and productivity. Shipment accuracy has increased to 99.9% across the network. Management visibility to inventory across the network is standardized with improved accuracy and provides Rinchem with the ability to quickly reposition inventory based on customer needs and reduce safety stock.

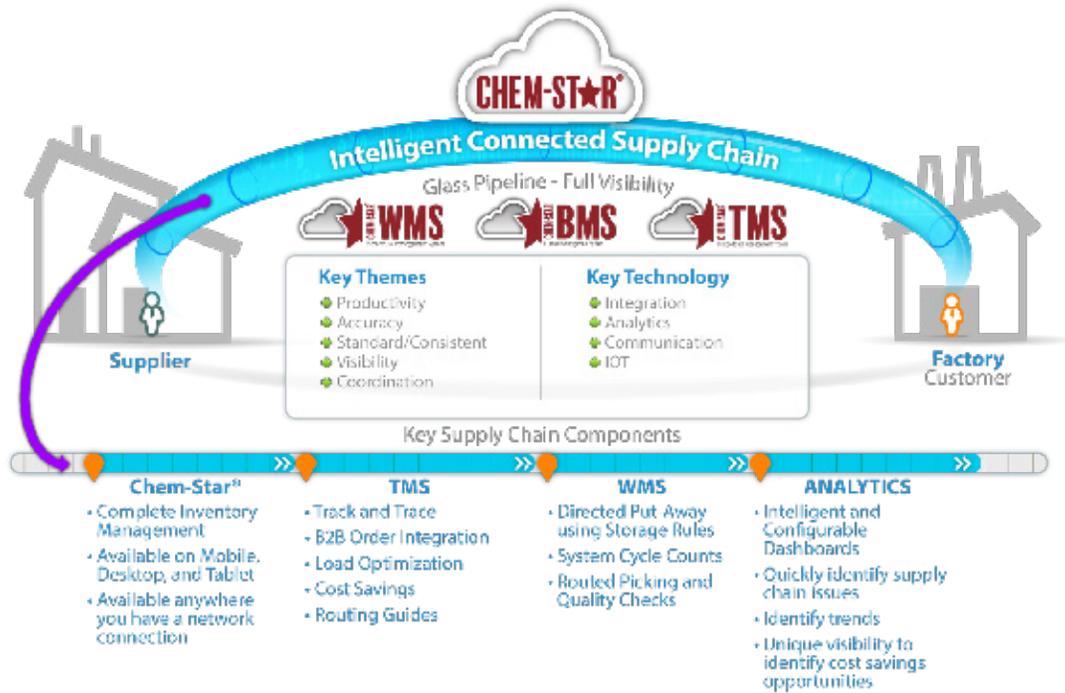
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Chem-Star's "Glass Pipeline" is a Game-Changer for Customers

With Tecsys WMS implemented as the core execution system, Rinchem turned its focus toward a broader digital transformation to build its Chem-Star Inventory Management System.

Chem-Star was conceived and developed based on the founder's idea of a "Glass Pipeline" for end-to-end global supply chain logistics, providing the company and its customers with an integrated view of inventory and shipments for greater control and efficiency, such as coordination among links in the supply chain, facilitating reductions in safety stock, inventory obsolescence, and non-value adding activities.

Chem-Star incorporates Tecsys WMS and a leading transportation management system (TMS) which enables inventory visibility across Rinchem's network of warehouses and transportation links. It utilizes GPS tracking for Rinchem's customized, over-the-road fleet of tractor/trailer units to ensure visibility of customer loads. Chem-Star is available to customers 24/7 through a secured web-based interface that offers many different real-time inventory queries and reports.

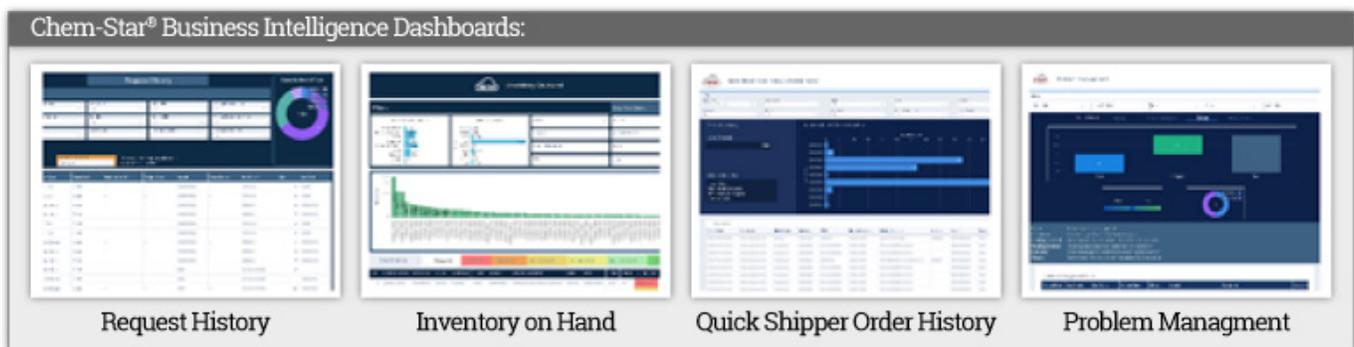


With Chem-Star, Rinchem can host and/or interface with any customer ERP or inventory management system to increase visibility and seamless transition of data across the supply chain.

Other features include:

- **Availability** - Chem-Star is Rinchem's cloud-based Inventory Management System, allowing users to view, manage and track inventory and shipments anywhere they have an internet connection.
- **Design Principles** - Chem-Star is designed to focus on the customer experience without the need for training. Modules are developed using a "process wizard" approach, providing a step-by-step process that allows users to input information in a guided format.

- **Integration** - Rinchem is committed to making the integration process straightforward, reliable and transparent. Its Easy-Link modules will interact seamlessly with each other and with customer and supplier-owned ERPs leading to quick and accurate management decisions. Chem-Star is a robust platform that allows business partners to transmit orders, track progress, review history, and generate reports. Supported integration technologies include REST API, CSV, XML, and Web Service. If needed, other integration technologies can be explored.
- **Device Support** - Chem-Star is designed to transform seamlessly between Desktop, Tablet or Mobile devices without the need to install software or an App. This provides a consistent experience regardless of the end-user device.
- **Security** - Inventory is visible only to owners and suppliers and is controlled via Chem-Star organization profiles and user accounts. Standard users see their own transaction history with the option to designate Super Users who can access all of their organization's transactions.
- **Transaction Email Notification** - Chem-Star provides the ability to configure email notifications by transaction type and to post and respond to questions on specific transactions. When a user posts a comment or a question to a specific order, it generates email alerts to relevant parties and maintains a history of all correspondence by transaction.
- **Advanced Analytics and Business Intelligence (BI)** - The Chem-Star's BI Dashboard provides real-time information on key performance metrics and inventory management health indicators that enable users to quickly identify and troubleshoot problem areas in the supply chain. BI Dashboard reporting allows users to easily drill-down into the information to the lowest level of detail for immediate action. Key areas of reporting include Inventory Risk management metrics - current/future inventory risk (Zero-Bin/High Risk DOI, etc.), product expiration risk, hold status aging, transaction history, and other supply chain management analytics.



Acquisition to Expand Logistics Services & Serve More Markets.

Rinchem is following a 50/50 model to grow the company organically by extending its reach into customer verticals with strong growth potential and through acquisition, especially to expand its international presence in major markets.

Last year, Rinchem announced the formation of Rinchem International to organize and lead all non-US Rinchem customer service centers. This new Rinchem entity was formed to better serve international customers and enable international growth by providing stronger leadership and quicker decision-making abilities with a focus on local presence.

It expects ITM services to grow rapidly as an NVOCC, as well as to leverage lead logistics provider capabilities to increase domestic transportation management revenue and strategically place transportation assets in new markets.

The company views its emerging technology with Chem-Star as an important competitive differentiator in the market and will continue to expand its capabilities based on a solid foundation of logistics executional systems.