

Enhancing Plant Efficiency: The Role of Compliant ISO Tank Container & Road Tanker Cleaning in India

STRENGTHING THE COMPETITIVENESS OF GUJARAT'S CHEMICAL & PECTOCEMICALS SECTOR

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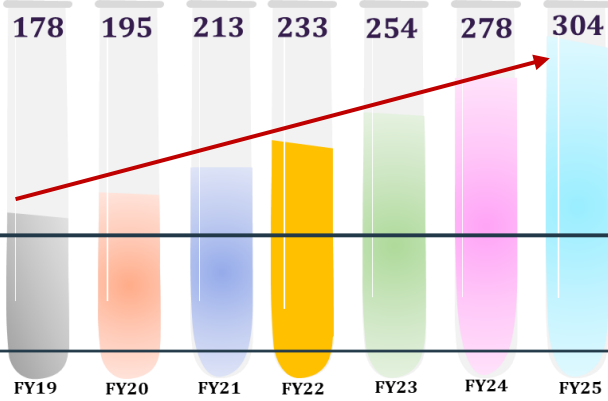
ZODIAC
Tank Container Terminals

 **Samsara Group**
Success in Service



Chemical Industry In India

Chemical Industry Market Size (USD Bn)



The industry is expected to grow **US\$ 1 Tn** by 2040

Latest FTAs Boosting Chemical Trade – Europe, UK, USA, Oman, GCC, etc.

₹600 crore allocated for establishing Chemical Parks

One of the world's largest; diversified across ~80,000 products.

₹20,000 crore allocated for CCUS (Carbon Capture, Utilization & Storage)

USD 1.06 Bn Indian Chemical Sector Foreign Direct Investment

India accounts for about **16-18%** of the world production of dyestuff & intermediates.

4th Largest producer of Agrochemicals in the world.

6th Largest producer of chemicals, **3rd** in Asia

3% Contribution to Global Chemical Sales

2nd Largest exporter of Agrochemicals

Contributing **7%** to India's GDP (India's GDP – US\$4.19 Tn)



Chemical Industry In Gujarat

Market Position



Gujarat dominates India's chemical manufacturing

Growth Drivers



strong export growth, with specialty chemicals predicted to grow at a CAGR of 12%

Key Hubs



Dahej, Ankleshwar, Bharuch, Vadodara, Vapi, Surat & Hazira,

Sustainability Focus



The industry is prioritizing green chemistry, carbon reduction & regulatory compliance to meet international standards

Global Shift



Amid a slump in Europe's chemical manufacturing, Gujarat is capitalizing on increased global demand for manufacturing outsourcing.

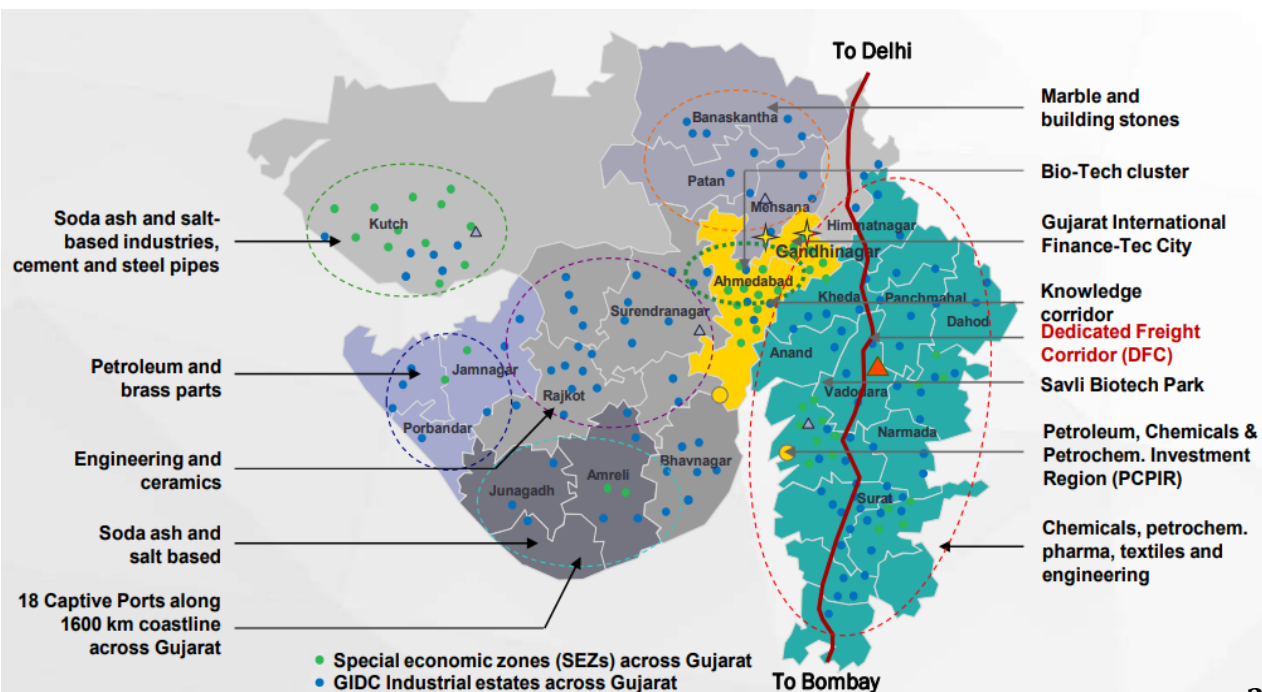


Gujarat is India's chemical hub, 53% of the nation's chemical production units.

62% of India's Petrochemical production



Gujarat leads with over 46% of India's chemical exports.



Enhancing Plant Efficiency Through ISO Tank Container Cleaning

Efficient logistics infrastructure is key to Gujarat's next phase of Chemical industry growth.



“Right-first-time” cleaning ensures immediate usability of tanks



Standardized cleaning processes reduce: Rejections at plant entry, Rework and repeated cleaning cycles



Efficient repair systems help: Reduce tank downtime, Avoid emergency replacements



Faster turnaround improves: Plant planning accuracy, Operational flexibility

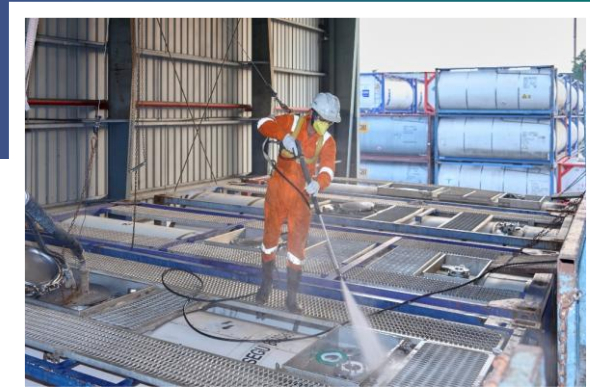


Importance of Compliance in Operational Reliability

- Compliance ensures adherence to: **Safety regulations, Environmental standards, Quality protocols**
- Benefits of strong compliance systems: Prevents cargo contamination, Avoids regulatory delays and holds, Builds trust between plants and logistics partners
- Compliance ensures **predictability in plant operations**



ISO Tank Containers :



**Cleaning is not an operational step
It is a safety control mechanism**

Importance of Proper Cleaning & Maintenance

Safety does not end with design - it depends on **disciplined cleaning, inspection, and repair practices.**

Chemical reactions



Pressure build-up



Product contamination



In extreme cases, accidents during loading or transit





Residual chemicals, incompatible cargo traces, or micro-cracks can cause:



Why is this crucial ?

- **Ensures Integrity:**
Regular inspections catch wear, corrosion, valve issues or seal deterioration before they turn into catastrophic failures.
- **Compliance with Law & Safety Standards:**
Regulatory bodies mandate scheduled maintenance and documentation - failure to comply can lead not only to accidents but also to legal penalties.

Infrastructure and Market Reality Check for Chemical Residual Cleaning Facility

Particular	Europe 	India 
Number of cleaning depots	~600+ high-standard facilities	~20-25 basic facilities
Standardized cleaning documentation	EFTCO Cleaning Document widely used	Not yet widely standardized
Certifications & audits	SQAS & industry standard assessments common	Very few ISO-certified facilities
Technology level	Mature, advanced with broad services	Emerging world-class tech at select depots
Uniformity of service quality	High	Developing
Depot Managing Carbon Footprint	High	Hardly any
Chemicals handled (range)	Wide range: acids, solvents, petrochemicals, hazardous chemicals, cryogenic liquids	Range includes acids, solvents, edible oils, hazardous chemicals; expanding
Market size – Chemical Industry	USD 670-690 Billion Chemical Industry	USD 300 Billion Chemical Industry

Transforming Chemical Logistics in India

Building a Safer, Greener India

Industry reality

1



India's chemical cleaning market is 90–95% unorganised, posing significant safety, quality, and compliance risks.

Strategic urgency

2



With the rapid expansion of chemical trade, safety is non-negotiable & must become the foundation of all operations.

India's moment

3



As India moves toward becoming the world's 3rd largest economy, this is the right time to build a safe, sustainable, future-ready industrial ecosystem.

Global competitiveness

4



India's global potential can only be realised through uncompromised quality, enabled by robust logistics safety & world-class infrastructure.

Our leadership

5



The **Zodiac Tank Container Terminal** exemplifies our commitment - a **state-of-the-art, sustainable facility with solar power, zero-liquid-discharge systems and advanced cleaning technology**, driving safety excellence while **reducing carbon footprint**.



CLEANING



TESTING



REPAIR

ZODIAC

Tank Container Terminals
A *Samsara Group* Company

A State of the Art ISO Tank Container & Road Tanker Cleaning Depot



Fully automated plant.



World Class QHSE standards.



Customized ERP to manage and handle complex processes.



Solar Panels for renewable energy



Effluent Treatment Plant (ETP) with Zero Liquid Discharge



Zero Carbon Footprint Plant



Retrofit Emission Control Device (RECD) on Diesel Generators for environment and health Safety





Near Hazira Port, South Gujarat



Member - Signatory to Responsible Care



- Zodiac Terminal facility at Khalapur is strategically located near the **Nhava Sheva Port**
- **Upcoming facility near Hazira Port, South Gujarat will be operational by October 2026**
- Strict adherence to MSDS for cleaning and decontamination of ISO tank containers
- Cleaning of 4000+ hazardous & non-hazardous chemical and food grade commodities
- Our Tank container terminal is fully compliant with all current regulations and best global practices related to health, safety, quality & environment.
- Only facility in India with
- Dedicated Bay for Food grade & chemical ISO tank containers
- Dedicated Bay for road Tankers (drive through)



Zodiac Terminals – Sustainability Opportunity

Future-Ready ISO Tank Container and Road Tanker Cleaning Terminal

- Smart terminals use AI to optimize yard planning and reduce turnaround time by **25–30%**.
- Automated cleaning systems** improve efficiency and reduce human exposure to chemicals.
- Real-time monitoring** ensures compliance with environmental and safety standards.
- Zero Carbon Footprint plant**
- Integration of Trees and Plants in Zodiac Terminals to **reduce hazardous air contaminants**
- Integration of these pillars creates a competitive and scalable business model.



Near Hazira Port, South Gujarat



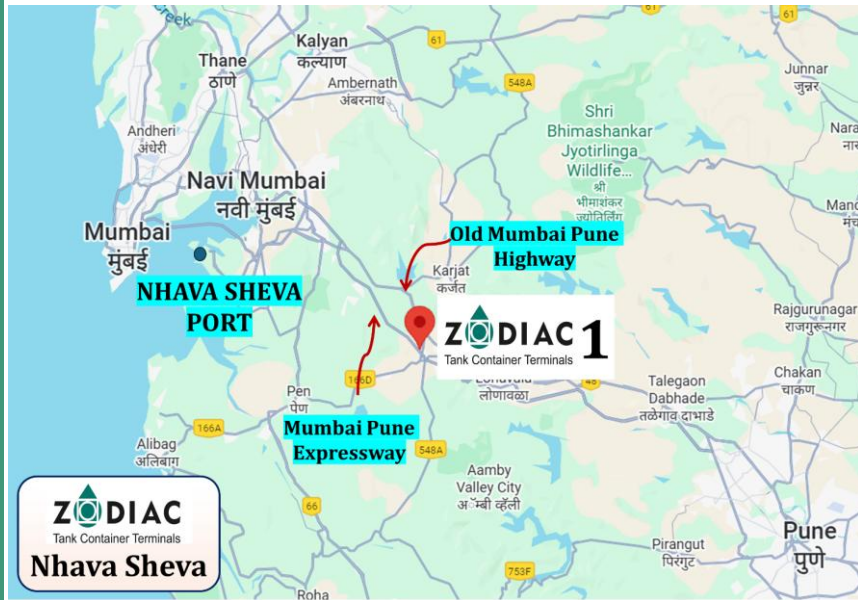
Zodiac Terminals – Sustainability Opportunity

Advanced Machinery & Low Emission Technology

- Deployment of bio-fuel and dual-fuel operated machinery
- Use of German-engineered equipment for:
 - High efficiency
 - Precision operations
 - Minimal maintenance
- **Noise pollution control:** Ultra-low noise machinery
- **Reduced carbon footprint through cleaner fuel alternatives**



OUR FACILITIES : Covering Chemical regions near Nhava Sheva and Hazira ports



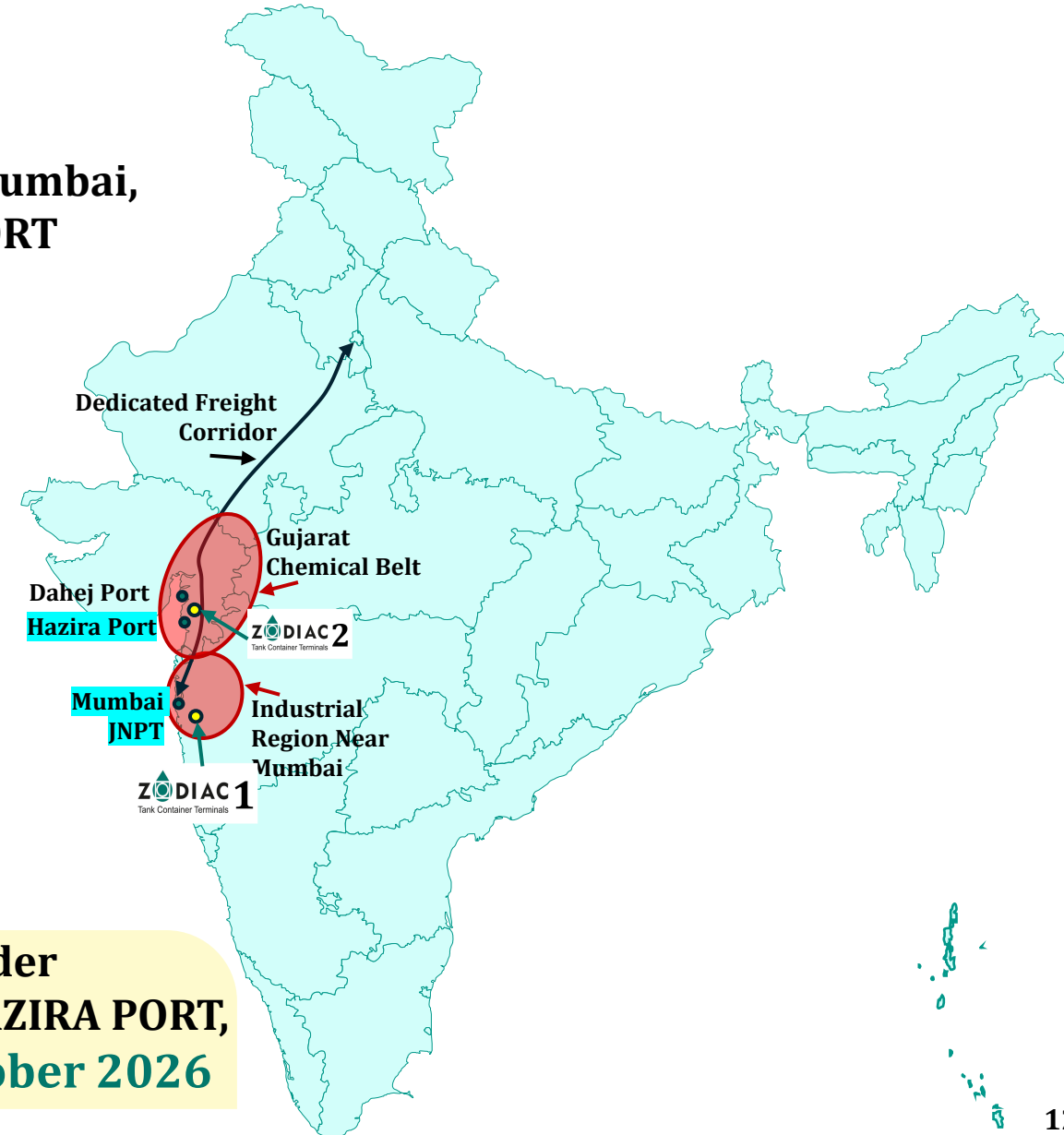
ZODIAC 1
Tank Container Terminals

**Facility at Khalapur, Mumbai,
near NHAVA SHEVA PORT**



ZODIAC 2
Tank Container Terminals

**Upcoming Facility Under
Development near HAZIRA PORT,
Operational by October 2026**



Be the change you wish to see in the world

Thank You



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Success in Service



CELEBRATING RELATIONSHIPS
30TH
YEAR
ANNIVERSARY