ISSUE 12/2025

BDMAI BULLETIN

From the Desk of President

Dear Friends,

I am pleased to share some important updates and highlights of BDMAI's recent initiatives and engagements, which reflect our continued commitment to supporting and strengthening the bulk drug industry.

With the support of some of the Committee members of the Association, we have met the representatives of local Pharma Associations in Visakhapatnam. The objective of the meeting is to understand the local common issues of the industry and try to bring to the notice of State / Central Governments. Such interactions help us remain closely connected with ground-level realities and member concerns. We will continue to interact with associations in other States where bulk drug industry is located.

BDMAI participated in CPhI India, for the first time, where we explored new avenues for industry engagement. In this context, we are currently exploring the possibility of organizing an exclusive pavilion for bulk drug manufacturers at CPhI India 2025, with a special focus on supporting MSME units. This initiative aims to provide enhanced visibility, networking opportunities, and market access to smaller manufacturers, enabling them to compete more effectively on a larger platform.

One of the key highlights was the seminar on "AI & Digitalization in Bulk Drug Manufacturing", organized by BDMAI. The seminar received an overwhelming response, with over 180 delegates participating, and was highly appreciated by industry professionals for its relevance, quality of speakers, and practical insights. The enthusiastic participation clearly indicates the industry's growing interest in adopting advanced technologies to improve efficiency, quality, and compliance.

Going forward, BDMAI will continue to organize such industry-focused seminars and knowledge-sharing programs to keep our members updated on new technologies, regulatory developments, and global best practices. Our objective remains to empower members with timely information and platforms that contribute to their growth and competitiveness.

I thank all members for their continued support and active participation in BDMAI's initiatives. Together, we will continue to work towards strengthening India's bulk drug manufacturing ecosystem.

With warm regards,

Ch. A P Rameswara Rao
National President

In this Bulletin you can expect

Global Pharma News

New Drug Developments:

Heidelberg Pharma sees promising results in multiple myeloma trial

Lead ATAC candidate HDP-101 shows strong clinical activity and safety in phase 8 cohort

Heidelberg Pharma has reported encouraging progress in its phase 2/2a trial of HDP-101 (INN: pamlectabart tismanitin), its lead ATAC candidate for relapsed or refractory multiple myeloma. The company confirmed that two patients in cohort 8 achieved stringent complete remission (sCR), with no detectable tumour cells in blood or bone marrow. Seven patients were evaluated at a dose level of 140 µg/kg. All showed a favourable safety and tolerability profile, with no dose-limiting toxicities observed.

Pharma Times 6.11.2025

Roche's fenebrutinib shows best-in-disease potential in multiple sclerosis

Phase III data suggest the drug could be the first high-efficacy, oral therapy for relapsing multiple sclerosis (RMS) or primary progressive multiple sclerosis. Roche's oral multiple sclerosis fenebrutinib is continuing on its path to become the first Bruton's tyrosine kinase (BTK) inhibitor for both the relapsing and primary progressive forms of the condition. In the first of three pivotal phase III trials, the primary progressive multiple sclerosis (PPMS) study FENtrepid found fenebrutinib slowed disability progression at least as effectively as Roche's monoclonal antibody Ocrevus (ocrelizumab), the only approved therapy in PPMS. A numerical benefit for fenebrutinib compared to ocrelizumab was seen as early as week 24, which lasted throughout the observation period.

European Pharmaceutical Review 10.11.2025

Adocia unveils new long-acting peptide platform for diabetes and obesity

Adocia has announced the filing of a patent for its new long-acting peptide platform, AdoXLong, aimed at improving treatment options for diabetes and obesity. The French biopharmaceutical company said the technology could extend the duration of action of acylated peptides to at least one month, with early results showing promise. The patent's initial application focuses on semaglutide, with Adocia reporting "promising in vitro and in vivo preliminary results indicating efficacy compatible with a once-monthly injection." The platform is designed to work with a broad range of peptides including GLP-1, GIP, amylin and dual/triple agonists.

Pharma Times 12.11.2025

Eisai shares long-term data on lecanemab at neurology congress

48-month analysis shows delayed progression and reduced risk in early Alzheimer's patients.

Eisai has presented new clinical data from a post-hoc sub-group analysis of the Clarity AD open-label extension for lecanemab at the 98th Congress of the German Society of Neurology in Berlin. The analysis focused on adult patients with early Alzheimer's disease who are apolipoprotein E ε4 non-carriers or heterozygotes.Participants who received treatment from the start through to 48 months (n=409) continued to accrue benefit over time, with sustained separation from the Alzheimer's Disease Neuroimaging Initiative cohort (n=79).

Pharma Times 13th November 2025

Genetically engineered iPSCs see clinical-scale platelet manufacturing potential

By utilising patient-derived instead of donor-derived platelets, the method could offer a safer approach to platelet transfusions. Notably, the proposed approach outlined by researchers in Japan also avoids the risk of immune rejection, making it a potentially safer approach to platelet transfusions. To achieve this, the team genetically engineered induced pluripotent stem cells (iPSCs) from peripheral blood mononuclear cells. After being converted to megakaryocytes, the platelets can be harvested from megakaryocyte cultures and returned to the same patient

European Pharmaceutical review 14.11.2025

Bayer begins phase 2 trial of new Alport syndrome therapy

New study to test Sema3A antibody in rare genetic kidney disease

Evotec SE has announced that partner Bayer AG has initiated a phase 2 clinical study of BAY 3401016, a monoclonal antibody targeting Semaphorin-3A (Sema3A), as a potential treatment for Alport syndrome. The programme stems from a multi-target research collaboration between the two companies in kidney diseases. Evotec is set to receive a milestone payment upon first patient dosing, expected in early 2026.

Pharma Times 4.12.2025

Five-year study confirms durable efficacy of etranacogene dezaparvovec

Gene therapy shows sustained benefit for adults with haemophilia B

CSL has announced five-year results from the pivotal phase 3 HOPE-B study, presented at the American Society of Hematology Annual Meeting. The data confirm the durability and safety of a single infusion of etranacogene dezaparvovec in adults with moderate to severe haemophilia B, reinforcing its position as the only commercially available gene therapy for this condition. The trial involved 54 adult male participants, of whom 50 completed five years of follow-up. Results showed that 94% of patients remained free from continuous prophylaxis treatment, with mean factor IX activity levels sustained at 36.1% at year five.

Pharma Timmes 9.12.2025

Drug Approvals

J&J's Darzalex gains first FDA approval in smouldering multiple myeloma

This approval marks a milestone for high-risk sMM patients, but analyst Biswajit Podder notes that there are caveats to its future success. Johnson & Johnson's (J&J) blockbuster oncology asset, Darzalex Faspro (daratumumab and hyaluronidase-fihj) has gained US approval in smouldering multiple myeloma (sMM). J&J's CD38-targeting monoclonal antibody (mAb) is now indicated for use in adult patients with high-risk sMM, meaning patients will have access to a treatment option before progression into active disease. This makes it the first drug to ever get the US Food and Drug Administration (FDA) go-ahead in the smouldering population.

Pharmaceutical Technologies 7.11.2025

Alvotech and Advanz Pharma Secure UK Approval for Gobivaz, a Biosimilar to Simponi

Alvotech and Advanz Pharma have announced that the UK Medicines and Healthcare products Regulatory Agency (MHRA) has granted marketing authorisations for all four presentations of Gobivaz, Alvotech's biosimilar to Simponi (golimumab). The approvals mark a major step in expanding patient access to advanced biologic treatments for immune-mediated diseases in the United Kingdom. The MHRA authorisations cover Gobivaz 50 mg/0.5 mL and 100 mg/mL formulations, available in both pre-filled syringe and autoinjector formats. The biosimilar is approved for the treatment of rheumatoid arthritis, psoriatic arthritis, axial spondylarthritis, ulcerative colitis in adults, and juvenile idiopathic arthritis.

Pharma Journalist 7.11.2025

FDA Approves First Gene Therapy for Broad SMA Patient Population

The U.S. Food and Drug Administration (FDA) has approved Novartis' Itvisma® (onasemnogene abeparvovec-brve) for children aged two years and older, as well as teens and adults, living with spinal muscular atrophy (SMA) caused by a confirmed mutation in the SMN1 gene. The decision marks a major milestone as Itvisma becomes the first and only gene replacement therapy authorized for such a broad SMA patient population in the United States. SMA is a rare, progressive neuromuscular disorder triggered by the absence or mutation of the SMN1 gene, which produces a protein essential for muscle function, movement, swallowing, and breathing. Without adequate SMN protein, motor neurons deteriorate, leading to severe muscle weakness. While the SMN2 gene can partially compensate, it produces only a small fraction of the necessary protein, resulting in significant clinical limitations for most patients.

Pharma Journalist 25.11.2025

Lotus Files South Korea NDA for LENZ's Presbyopia Drug VIZZ

LENZ Therapeutics and Lotus Pharmaceutical have reached a key regulatory milestone with the submission of a New Drug Application (NDA) to South Korea's Ministry of Food and Drug Safety (MFDS) for VIZZ™, a novel treatment for presbyopia in adults. The filing marks the first regulatory submission under the exclusive licensing and commercialization agreement the two companies signed in May 2025, which covers South Korea and several Southeast Asian markets.

Pharma Journalist 2.12.2025

Lupin Wins FDA Approval for Armlupeg Pegfilgrastim Biosimilar

Lupin Limited has secured a key regulatory milestone with the U.S. Food and Drug Administration granting approval to Armlupeg™ (pegfilgrastim-unne), the company's first biosimilar to Amgen's blockbuster drug Neulasta®. The approval marks a significant step in the Indian pharmaceutical major's plan to expand its biologics footprint in the United States and increase access to affordable oncology supportive-care treatments

Pharma Journalist 2.12.2025

MHRA approves Leqembi IV maintenance as additional Alzheimer's option

Decision provides UK Alzheimer's patients with an alternative administration method for Eisai and Biogen's antibody drug. Eisai and Biogen have received UK approval for intravenous (IV) maintenance dosing of Leqembi (lecanemab) for patients with early Alzheimer's, expanding treatment options for the disease. After 18 months of a dosing regimen of 10 mg/kg once a fortnight, patients may be transitioned to the maintenance dosing regimen of 10 mg/kg once every four weeks. Otherwise, they may continue a regimen of 10 mg/kg once every two weeks.

European Pharmaceutical Review 15.11.2025

Nipocalimab authorised for adults with antibody-positive generalised myasthenia gravis

Johnson & Johnson wins EU approval for new gMG treatment

Johnson & Johnson has received European Commission approval for nipocalimab, marketed as IMAAVY, as an add-on therapy for generalised myasthenia gravis (gMG). The decision makes nipocalimab the first FcRn blocker authorised for both adults and adolescents aged 12 and older who are anti-acetylcholine receptor (AChR) or anti-muscle-specific kinase (MuSK) antibody-positive.

Pharma Times 4.12.2025

Investments & JVs

Sandoz CEO forecasts a Q1 or Q2 market entry for semaglutide biosimilars in Canada

Canada will be the first regulated market to undergo a market influx of semaglutide biosimilars.

Sandoz CEO Richard Saynor predicts biosimilars referencing semaglutide to enter the Canadian market in early in 2026, as the patent protection for Novo Nordisk's blockbuster drug looms. "No one's actually got an approval yet, but certainly we would expect to see entrance in that market in Q1 [or] Q2 next year," Saynor said at the Financial Times Global Pharma and Biotech Summit on 12 November.

Pharmaceutical Technologies 12.11.2025

After signing an $80 million investment deal with SixPeaks Bio last year, AstraZeneca has quietly exercised its option to acquire the obesity-focused Swiss biotech

Its interest in the firm centres on SixPeaks' bispecific antibody candidate that targets weight-management while aiming to preserve lean muscle mass – thus overcoming a common side effect of blockbuster glucagon-like peptide 1 (GLP-1) agonist treatments. AstraZeneca's third quarter figures show it made an initial payment of $170 million to gain the remaining shares in SixPeaks on 22 October and will pay a further $30 million after two years, with up to $100 million due if regulatory milestones are met.

European Pharmaceutical Review 21.1125

Alkermes Boosts Offer to Acquire Avadel in Deal Worth Up to $2.37 Billion

Alkermes plc and Avadel Pharmaceuticals have agreed to revised terms for Alkermes' acquisition of Avadel, increasing the total potential value of the deal to $22.50 per share. The new offer consists of $21.00 in cash plus a non-transferable contingent value right (CVR) worth up to an additional $1.50 per share. The CVR will pay out if the U.S. FDA grants final approval of LUMRYZ™ for idiopathic hypersomnia in adults by the end of 2028. The updated proposal, announced on November 18, 2025, amends the companies' prior agreement from October and raises Avadel's total valuation to approximately $2.37 billion, assuming the CVR milestone is achieved.

Pharma Journalist 21.11.2025

Vaximm Enters Talks for Global License of Oral Cancer Therapy

OSR Holdings, Inc. announced that its subsidiary Vaximm AG has signed a non-binding term sheet with Swiss-based life sciences investment group BCM Europe AG (BCME) to evaluate a potential exclusive global licensing agreement for VXM01, Vaximm's first-in-class oral cancer immunotherapy platform. BCME is OSR Holdings' largest shareholder, positioning the discussions within a strategically aligned framework as the two companies move forward with evaluating a transformative partnership model.

Pharma Journalist 24.11.2025

Telix Opens First APAC Radiopharmaceutical Manufacturing Site in Japan

Telix Pharmaceuticals has officially opened its first cyclotron-equipped manufacturing facility in the Asia-Pacific region, marking a significant expansion of the company's radiopharmaceutical production capabilities. The new site, known as Telix Manufacturing Solutions (TMS) Yokohama, is located in Yokohama, Japan, and represents an important milestone in the company's regional clinical and commercial strategy.

Pharma Journalist 25.11.2025

MSD to acquire Cidara Therapeutics after positive trial results

MSD are to acquire Cidara Therapeutics following encouraging results from the company's phase 2b trial of its lead antiviral candidate CD388. The deal, valued at approximately $9.2 billion, underscores the growing importance of hVIVO plc, which has partnered with Cidara throughout the drug's development. CD388 is a long-acting, strain-agnostic antiviral agent designed to prevent influenza infection in individuals at higher risk of complications. It offers protection against both influenza A and B and is currently in phase III clinical development, having already received Breakthrough Therapy and Fast Track Designations from the US Food and Drug Administration (FDA).

PF Media 4.12.2025

CSL opens $1bn Australian vaccine and antivenom manufacturing facility

The Melbourne site adds Australia to a select group of nations with advanced cell-based influenza vaccine capabilities. CSL's vaccine arm CSL Seqirus has opened doors at its new $1 billion influenza vaccine and antivenom manufacturing facility in Melbourne. The site is the first cell-based influenza vaccine manufacturing facility in the Southern Hemisphere, making Australia one of only three countries with end-to-end capabilities for advanced cell-based influenza vaccines.

European Pharmaceutical Review 8.12.2025

Viatris signs agreements with Biocon on $815m stake sale

The deal is anticipated to be finalised in the first quarter of 2026, pending the fulfilment of all closing conditions. Viatris has signed definitive agreements for the sale of its equity stake in Biocon Biologics to Biocon for $815m. Viatris will sell all of its convertible preferred equity in Biocon Biologics. The deal value comprises $415m in newly issued Biocon equity shares and $400m in cash. The newly issued shares will be listed and traded on the National Stock Exchange of India. They will be subject to a lock-up period of six months, and the overall transaction value will be adjusted for applicable taxes.

Pharmaceutical Technologies 8.12.2025

Mirum to buy Bluejay for up to $820m in rare liver disease push

The deal gives Mirum access to Bluejay's monoclonal antibody brelovitug, which is currently in Phase III trials. Mirum Pharmaceuticals has agreed to acquire Bluejay Therapeutics in a deal worth up to $820m, adding a Phase III liver disease candidate to its portfolio. According to the agreement, US-based Mirum will pay $250m in cash and $370m in its own stock upfront to buy the private biotech. Bluejay is also in line to receive a further $200m in potential sales-based milestones. The deal gives Mirum access to brelovitug, Bluejay's monoclonal antibody (mAb) currently being evaluated in a Phase III trial for chronic hepatitis D, a rare and severe liver infection for which there are no US Food and Drug Administration (FDA)-approved therapies. Gilead's Hepcludex (bulevirtide) is approved as a hepatitis D treatment in the EU

Pharmaceutical Technology 9.12.2025

Association Activities

Circulars

Following circulars have been sent to members during the month:

Sl. No.	Date of Issue	Subject
1	28.11.25	Seminar on AI & Digitalization in Bulk Drug Manufacturing
2	24.11.2025	Revision in User Charges
3	24.11.2025	Block you Diary – Seminar on AI & Digitalization in Bulk Drug Manufacturing
4	11.11.2025	Mastering Clean Room Compliances
5	3.11.2025	Interactive Meeting with Hon'ble CM of Punjab

For details of the above circulars, please visit: https://bdmai.org/circulars/

Representations:

BDMAI made a representation to DGFT requesting for amendments to para 4.2 of Foreign Trade policy regarding mentioning the details of consumption of imported raw materials on tax invoices. For detailed representation, please click here.

Events

Interactive Meeting with Tech Mahindra Foundation:

BDMAI organized an interactive meeting with the senior officials of Tech Mahindra Foundation to understand the emerging skill needs and workforce in Life Sciences, Digital Transformation & AI Adoption in Life Sciences

Visit to Visakhapatnam:

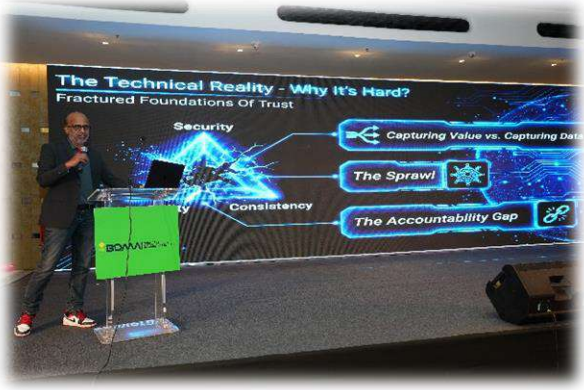
Some of the executive committee members of BDMAI visited Visakhapatnam and interacted with the local associations. Representatives from JNPC Manufacturers Association, JN Pharma City, Achyutaparam Industries association have participated and discussed various industry related issues.

CPhI India 2025:

BDMAI, for the first time, participated in the CPhI India 2025 during 25-27th November 2025 and interacted with many bulk drug manufacturers. BDMAI e-marketing portal was widely promoted in the event. Also discussed with the organizers, Informa, about the possibilities of organizing an exclusive pavilion for bulk drug manufacturers, particularly to support MSME units.

Seminar on AI & Digitalization in Bulk Drug Manufacturing:

BDMAI organized a seminar on AI & Digitalization of Bulk Drug Manufacturing on 6th December 2025. Topics covered in this seminar are: Automation in Bulk Drug Industry, Harnessing Artificial Intelligence for Smarter R&D in Bulk Drug Manufacturing, Leveraging AI for GMP Excellence in Bulk Drug Manufacturing. Eminent speakers from Litewave AI, Aurbonindo, Polomen, Endress+Hauser Micro Pneumatic Polmon Instruments, Tech Mahindra, Calliber Technologies have made presentations on the above topics. The Seminar was well attended by the member industries.



Important Notifications & Trade Agreements

Clarification on Redemption of Advance Authorisations

Clarifications by DGFT: DGFT provided some clarifications regarding refund of IGST paid on exports in cases where the exporter had availed specified duty exemptions. For detailed circular, please click **HERE**

Amendment in the Handbook of Procedures with regards to the application form for Importer/ Exporter profile

DGFT has notified that the application form for Importer/Exporter profile, that is the ANF-1A form will be merged with the ANF-2A. Please click HERE for more details.

Updates on Trade Agreements with various Countries

India and Bahrain agree to accelerate trade talks for a Comprehensive Economic Partnership Agreement

India and Bahrain have agreed to accelerate negotiations on a Comprehensive Economic Partnership Agreement (CEPA) following the High Joint Commission meeting. Both parties have also initiated talks on a Bilateral Investment Treaty and a Double Taxation Avoidance Agreement to enhance investor confidence. The CEPA aims to support Indian companies in sectors such as manufacturing, logistics, tourism, and healthcare.

India and European Union conclude the trade negotiations for the India-EU Free Trade Agreement
India and the European Union held trade agreement negotiations in November, marking significant progress toward a comprehensive trade agreement. Both sides have agreed to conclude the agreement this year by addressing concerns over the European Carbon Border Adjustment Mechanism and proposed steel regulations. For more details, please see the Trade Agreement

India and Israel set to initiate negotiations for a trade agreement

On 20th November 2025, India and Israel signed the Terms of Reference, officially initiating negotiations for a comprehensive Free Trade Agreement. Officials from both the sides have emphasized that the agreement will enhance bilateral investment flows and cooperation in technology and innovation. The Terms outline areas of cooperation such as tariff reduction, reduction in non-tariff barriers, investment facilitation, and promoting trade in services. The agreement is also expected to boost new opportunities in agritech, cybersecurity, defense, and high-tech sectors.

India and the Eurasian Economic Union expected to launch trade negotiations for the Free Trade Agreement

On 26th November 2025, India and the Eurasian Economic Union (EAEU) launched negotiations for a Free Trade Agreement following the signing of Terms of Reference in August this year. The EAEU comprises of Russia, Armenia, Belarus, Kazakhstan, and Kyrgyzstan. The trade talks are expected to aim at expansion of market access for Indian exporters, particularly MSMEs, farmers, and fishermen.

India and New Zealand conclude the fourth round of trade negotiations

India and New Zealand successfully concluded the fourth round of Free Trade Agreement. Both sides reaffirmed their commitment to an early agreement aimed at boosting trade and investment. The negotiations focused on goods, market access, services, and rules of origin. India has maintained its commitment to protect sensitive sectors like dairy and MSMEs, while New Zealand has sought deeper tariff cuts for its agricultural products.

The UAE – Australia Comprehensive Economic Partnership Agreement (CEPA) comes into force

The UAE-Australia CEPA has entered in force with effect from 1st October 2025. The CEPA aims to periodically phase out tariffs on over 99% of Australian exports by value, including exports of frozen red meat, wine, and canola seeds. Other sectors which aim to benefit from the Agreement include automotive, pharmaceuticals, and investment services. The Agreement will eliminate tariffs on exports of furniture, copper wire, glass containers, and plastic from UAE.

The UAE – Malaysia Comprehensive Economic Partnership Agreement officially enters into force

The CEPA between UAE and Malaysia has come into effect on 1st October 2025. The CEPA will eliminate tariffs on over 90% of goods, streamline customs procedures, and enhance market access across key sectors including energy, food production, and logistics. For the UAE, it will strengthen its position as a gateway to the Middle East and Africa, while Malaysia gains improved access to Gulf markets and investment opportunities.

ASEAN and China sign the revised China–ASEAN free trade agreement (CAFTA 3.0)

On 28th October 2025, the ASEAN countries and China signed the expanded ASEAN and China endorsed CAFTA 3.0, during the 28th ASEAN–China Summit. CAFTA 3.0 is an upgrade to the 2002 free trade agreement. The new agreement includes nine additional chapters covering digital economy, green economy, and supply chain connectivity. The Agreement has been introduced amid rising global protectionism and aims to put China at a position of ‘defender’ of free trade. CAFTA 3.0 is expected to further integrate the east Asian economies.

USA announces trade agreement with Malaysia and Cambodia and framework agreement with Vietnam and Thailand

Under the terms of the forthcoming trade agreement, Cambodia has committed to fully eliminate tariffs on US goods upon the implementation of the agreement. Malaysia has agreed to eliminate or reduce tariffs on selected US products, with specific reductions applied according to predetermined percentages. In exchange, the United States has committed to cap its tariff rate at no more than 19% on imports from both Malaysia and Cambodia, rather than implementing reciprocal tariff eliminations. Notably, the exports of rare earth materials from Malaysia have not been limited.

From Mandate to Momentum: Navigating the New Era of ESG and Carbon Accounting in the Pharma Manufacturing Sector

Shantanu Sharma
Cofounder & COO
Pro Zero Carbon

In today's rapidly evolving business landscape, sustainability has moved decisively from being a peripheral corporate responsibility initiative to a **core strategic imperative**—particularly for **India's pharmaceutical and bulk drug manufacturing sector**. Once seen as a compliance burden, Environmental, Social, and Governance (ESG) practices and carbon accounting have now become **essential tools for resilience, competitiveness, and market access**.

Across global supply chains, sustainability has become the **new language of business**. Investors, regulators, customers, and employees are all demanding **transparency, accountability, and measurable climate action**. For pharmaceutical manufacturers—especially those in the **bulk drug and API segment**—this is not just about environmental responsibility, but about **ensuring continuity in exports, attracting capital, and meeting evolving buyer expectations** in regulated markets such as the EU and the US.

At the heart of the environmental, or "E," pillar of ESG lies **carbon accounting**—the precise process of measuring and managing greenhouse gas (GHG) emissions. For any pharma organization aiming to thrive globally, ignoring ESG and carbon accounting is no longer an option. Companies without a credible strategy face risks that extend beyond brand perception—from **regulatory non-compliance and limited market access** to **higher financing costs and operational inefficiencies**.

This article explores why **2025 marks a tipping point** for India's pharma and chemical manufacturing sectors in their sustainability journey, what's driving this change, and how businesses can prepare to integrate **data-backed, compliant, and measurable climate action** into their operations.

Why 2025 is a Defining Year for ESG and Carbon Action

A Rising Tide of Regulation and Global Compliance

The global regulatory landscape for sustainability reporting is changing rapidly. The **European Union's Corporate Sustainability Reporting Directive (CSRD)** and the **Carbon Border Adjustment Mechanism (CBAM)** are among the most significant developments. These frameworks are transforming how companies—particularly exporters—must **track and disclose their climate impact**.

For Indian bulk drug exporters supplying intermediates, APIs, and formulations to Europe, **reporting accurate carbon data is becoming critical** to maintaining market access. CBAM, in particular, is set to affect companies dealing in high-energy manufacturing and process industries, requiring them to account for the carbon footprint of their exported products.

In India, **SEBI's Business Responsibility and Sustainability Reporting (BRSR)** has made sustainability disclosures mandatory for the top listed companies. This regulatory momentum is gradually cascading across the value chain, with large corporates demanding environmental data and emission metrics from their suppliers—including chemical and API manufacturers.
Financial institutions are also realigning their risk frameworks. Investors now assess companies not just on profitability but also on **ESG performance and climate risk management**. Organizations that fail to report high-quality data are beginning to experience restricted access to capital or higher borrowing costs.

2. The New Currency of Trust

In an era of increasing transparency, **trust has become one of the most valuable corporate assets**. Buyers, regulators, and consumers are all looking for authentic environmental commitments backed by credible data. For manufacturers, especially in sectors as regulated as pharmaceuticals, **greenwashing**—making unverified or exaggerated environmental claims—can severely damage reputation and trust. On the other hand, **transparent, evidence-based ESG reporting** enhances brand credibility and long-term customer relationships. With sustainability information becoming public through various reporting platforms, companies that can demonstrate genuine performance with data—such as energy efficiency, water reuse, or waste reduction—will stand apart in the global market.

3. "You Can't Manage What You Can't Measure"

Carbon accounting provides the foundation for all meaningful climate action. For process-intensive industries such as bulk drug and chemical manufacturing, it allows businesses to identify emission hotspots, improve efficiency, and future-proof operations. Climate-related risks are no longer abstract. From extreme weather events disrupting logistics to new carbon taxes increasing input costs, businesses are facing both **physical and transitional risks**. Quantifying emissions is the first step toward mitigating these challenges and adapting operations to a low-carbon future.

Carbon accounting typically categorizes emissions into three scopes:

- **Scope 1:** Direct emissions from company-owned sources, such as boilers, furnaces, or on-site fuel combustion.
- **Scope 2:** Indirect emissions from purchased electricity, heat, or steam — particularly relevant for energy-intensive facilities.
- **Scope 3:** All other indirect emissions across the value chain, from raw material sourcing and logistics to product disposal.

For pharmaceutical companies, **Scope 3 emissions** are often the largest and most complex, encompassing suppliers of chemicals, solvents, and packaging materials. Managing these requires collaboration, technology, and a clear understanding of upstream and downstream processes.

The Building Blocks of Carbon and ESG Integration

Integrating ESG and carbon accounting into operations requires a structured, data-driven approach. Below are key elements that companies should prioritize:

1. Establishing a Robust Carbon Baseline

A clear emissions baseline is essential. Companies should collect data on fuel use, energy consumption, waste generation, and raw material inputs. This helps in identifying hotspots—such as solvent recovery, utilities, or effluent treatment plants—where interventions can have the highest impact.

2. Adopting Standardized Frameworks

Using recognized methodologies such as the **GHG Protocol**, **CDP**, and **Science Based Targets initiative (SBTi)** ensures credibility and comparability of data. For ESG, frameworks such as **GRI**, **SASB**, and **BRSR** help align corporate disclosures with global standards.

3. Integrating Life Cycle Assessments (LCAs)

LCAs enable companies to evaluate the environmental impact of products from raw material extraction to end-of-life disposal. In pharma manufacturing, LCAs can uncover opportunities to reduce solvent use, optimize energy-intensive steps, and select more sustainable raw materials.

4. Engaging the Supply Chain

For many companies, the majority of emissions lie in their supply chain. Collaborating with suppliers to collect accurate data, promote green procurement, and support low-carbon practices is key. Supplier engagement can also strengthen export competitiveness, especially for companies working with international clients.

5. Leveraging Technology for Data Management

Manual spreadsheets are increasingly inadequate for sustainability management. Digital tools that automate data collection and enable real-time tracking can significantly improve accuracy and reduce reporting fatigue. Integration with ERP or process control systems ensures that carbon accounting becomes a routine business function rather than an annual exercise.

6. Embedding ESG in Strategy and Governance

Sustainability should not remain confined to EHS or CSR departments. It must be integrated into business strategy, procurement decisions, and board-level discussions. Creating internal capacity through training and awareness ensures long-term cultural adoption.

7. Preparing for Assurance and Verification

External assurance of ESG and carbon data enhances credibility. Companies should prepare for third-party audits and certification under standards such as **ISO 14064** or **EcoVadis**, which are increasingly used by global buyers for supplier evaluation.

Turning Compliance into Competitive Advantage

For Indian manufacturers, especially in the pharmaceutical sector, sustainability can serve as a **differentiator** in global markets.

1. **Cost Efficiency:** Energy optimization, waste reduction, and efficient water management directly improve operational efficiency and margins.
2. **Market Access:** Compliance with frameworks like CBAM or REACH is becoming a prerequisite for exporting to Europe and other regions.
3. **Investor Confidence:** Transparent disclosures and science-based targets attract responsible investment and lower financial risk.
4. **Reputation and Partnerships:** Global pharmaceutical clients are prioritizing suppliers with clear ESG commitments, offering long-term business continuity.

Companies that act early can turn sustainability from a compliance task into a **strategic growth driver**.

A Call to Action for the Pharma Manufacturing Community

The Indian pharmaceutical and bulk drug sector stands at a pivotal juncture. As one of the largest suppliers of APIs and intermediates globally, the industry's actions will have a direct bearing on India's overall climate leadership.
The time has come for the sector to:

- Build **robust carbon measurement and reporting frameworks**.
- Integrate **ESG goals with business strategy**.
- Adopt **technology and partnerships** that simplify sustainability management.
- Move from periodic compliance to **continuous improvement and innovation**.

Companies that embed sustainability into their operations today will define the industry's future competitiveness and credibility on the world stage.

About Pro Zero Carbon

Pro Zero Carbon is a sustainability and carbon management company helping industries measure, manage, and mitigate their environmental impact through data-driven tools and expertise. The company provides services across **carbon accounting, ESG strategy development, BRSR and international reporting frameworks, life cycle assessments, SBTi target setting, supply chain ESG management, and compliance readiness for CBAM, REACH, and EcoVadis**.

For the pharmaceutical and bulk drug sector, Pro Zero Carbon partners with organizations to translate sustainability goals into measurable, verifiable outcomes — enabling companies to move confidently from compliance to competitive advantage.

Water and Wastewater Management in the Pharmaceutical Industry: A Strategic Imperative for Compliance and Sustainability

Mr. Rahul Mahamunkar,

Group Sales Head,
TSA Process Equipment Pvt Ltd
(Thermax Group Company)

Water is essential across every stage of pharmaceutical manufacturing from raw material processing and formulation to equipment cleaning, cooling, and sterile production. As global regulations grow stricter, pharma companies are strengthening their water and wastewater management frameworks to ensure compliance, operational reliability, and long-term sustainability.

India, one of the world's largest producers of Active Pharmaceutical Ingredients (APIs) and contributor of over 20% to global generic exports, is rapidly expanding under the self-reliance mission. However, this growth raises a critical challenge: how to scale production without increasing environmental burden. With API manufacturing generating 5-20 litres of wastewater for every gram of product, achieving complete effluent control through Zero Liquid Discharge (ZLD) has become both an environmental necessity and a regulatory mandate.

Role of Water in Pharma Manufacturing

Pharmaceutical plants rely on multiple grades of water, each governed by strict quality norms:

- **Raw / Process Water**: Boilers, cooling, utilities
- **Purified Water (PW)**: Drug formulation, cleaning
- **Water for Injection (WFI)**: Sterile and aseptic applications
- **Clean Steam**: Sterilisation and critical processes

Any deviation in water quality can directly impact product safety and regulatory compliance, making robust water treatment systems indispensable.

Wastewater Complexities in Pharma Manufacturing

Pharmaceutical wastewater is among the most challenging industrial effluents due to:

- High organic load
- API and solvent residues
- Toxic and refractory compounds
- Elevated dissolved solids

Conventional ETPs cannot fully handle these characteristics. Advanced wastewater treatment and Minimum Liquid Discharge (MLD) and ZLD systems enable high water recovery, reduced freshwater dependency, and assured compliance, turning water circularity into a strategic advantage.

The Bulk Drug Effluent Challenge

API wastewater typically contains:

- **Very high TDS** (25,000 - 35,000 mg/L or more)
- Complex chemical and organic compounds
- Refractory, solvent-rich streams

Such loads demand advanced physical, chemical, and thermal treatment solutions beyond standard ETP capabilities.

Regulators, including the CPCB now mandate ZLD across major pharma clusters such as Hyderabad, Vizag, Tarapur, Sambhaji Nagar, and Ankleshwar.

Non-compliance can lead to:

- Production shutdowns
- Severe legal and financial consequences
- Loss of credibility among regulators, investors, and global buyers

Toward a Future-Ready Water Strategy for Pharma

The pharmaceutical sector stands at the crossroads of rapid growth and increasing environmental accountability. As regulatory scrutiny intensifies and water scarcity becomes more pressing, water circularity is emerging as a key strategic differentiator.

Government initiatives such as Atmanirbhar Bharat, along with BDMAI's focus on sustainable domestic API production, are accelerating the expansion of India's manufacturing capacity. In this transition, water and energy efficiency are becoming central to operational excellence.

Integrated high-purity water systems, advanced effluent treatment & recycling, and Zero Liquid Discharge (ZLD) technologies enable pharma facilities to:

- Build operational resilience
- Protect scarce freshwater resources
- Ensure regulatory and environmental compliance
- Strengthen long-term competitiveness

Modern ZLD systems can recover 90-95% of water, cutting freshwater dependence by 60–70% while significantly enhancing ESG performance.

A forward-looking water strategy is no longer optional, it is a foundational requirement for sustainable, future-ready growth in the pharmaceutical industry.

BULK DRUG IMPORTS APRIL - OCTOBER

Value in Mn. $

HS Code	Description	2024-25	2025-26	Growth %
17023010	Glucose liquid	0.041	0.090	118.14
17023020	Glucose solid	0.476	0.487	2.25
17023031	Dextrose,solid	0.504	0.398	-20.95
17023039	Dextrose other than solid	0.528	0.765	44.85
17024039	Dextrose other than solid	0.083	0.132	59.22
29051410	Ethambutol, ethambutol hcl	2.181	2.127	-2.45
29051420	Salbutamol sulphate	0.154	0.255	65.32
29054300	Mannitol	30.815	33.875	9.93
29054400	D-glucitol (sorbitol)	6.453	6.291	-2.51
29071930	Thymol	0.054	0.065	21.05
29072200	Hydroquinone	19.601	20.844	6.34
29095010	Guaiacol	0.810	1.855	129.18
29124940	3,4,5-trimethoxy-benzaldehyde	0.271	0.290	7.19
29154010	Monochloroacetic acide their salts	1.464	1.096	-25.15
29163120	Benzyl Benzoate	0.295	0.629	113.54
29163150	Benzocaine (ethylpara-amino benzo	0.009	0.078	811.87
29163400	Phenyl acetic acid	3.418	1.496	-56.22
29171940	Ferrous fumerate	0.028	0.040	43.43
29171970	Ethoxy methylene malonate, diethy	12.130	8.765	-27.74
29181120	Calcium lactate	0.280	0.184	-34.13
29181320	Metroprolol tartrate	0.331	1.322	298.99
29181510	Potassium citrate	1.044	0.628	-39.84
29181520	Sodium citrate	1.280	2.464	92.53
29181550	Ferric ammonium citrate	0.000	0.005	
29181610	Calcium gluconate	5.335	4.570	-14.34
29181620	Ferrous gluconate	0.000	0.023	
29182110	Salicylic acid	17.538	12.437	-29.09
29182120	Sodium salicylate	0.038	0.067	77.64
29182200	0-acetylsalicylic acid its salts and es	0.340	0.371	9.18
29182310	Methyl salicylate	0.745	0.534	-28.37
29182320	Amino salicylate	0.000	0.033	
29183030	Nalidixic acid	0.560	0.320	-42.87
29199010	Glycerophosphoric acid	0.002	0.041	2346.52
29214600	amfetamine INN and its related api	0.238	0.139	-41.62
29215110	o phenylanediamine	10.388	7.655	-26.31
29215120	M-phenylenediamine (m-di aminob	2.337	2.171	-7.11
29215130	P-phenylenediamine	3.048	2.630	-13.74
29224100	Lysine and its esters salts thereof	72.587	65.952	-9.14
29224210	Glutamic acid	0.465	0.535	15.25
29224220	Monosodium glutamate (aginamot	37.086	37.608	1.41
29224910	Amino acetic acid (glycine)	15.960	10.198	-36.10
29224920	N-methyl taurine	0.710	2.488	250.25
29225011	Para-amino-salicylic acid	0.118	0.012	-90.26
29225013	Procaine hydrochloride	0.000	0.014	
29225015	L-tyrosine(p-hydroxyphenylamine)	1.221	1.848	51.31
29225021	Frusemide	0.049	0.247	409.75
29231000	Choline and its salts	1.599	1.177	-26.39

29241100	Meprobamate (inn)	1.593	0.810	-49.18
29242910	Acetanilide	8.620	8.036	-6.78
29242960	Pyrazinamide(pyrazine carboxamid	0.809	0.650	-19.72
29242970	Pretilachlor	1.582	2.057	30.03
29242980	Paracetamol	3.094	7.755	150.62
29262000	1-Cyanoguanidine (dicyandiamide)	45.652	33.950	-25.63
29263000	Fenproporex (inn) & its salts	0.000	0.945	
29264000	Alpha-phenylacetoacetonitrile	0.040	0.201	400.17
29280010	Isoniazid	1.619	1.465	-9.48
29309014	Industrial chemical	0.000	7.998	
29309040	L-cystine (alpha-amino beta-thiopr	10.874	0.000	-100.00
29322010	Coumarin,mthylcoumrn & ehylcour	0.600	0.573	-4.58
29329300	3 -Carboxy(Para sulpho- phenyl)-5-	1.739	0.896	-48.48
29329600	Carbofuran	0.000	2.536	
29331100	Phenazone (antipyrin) and its deriv	0.792	0.881	11.21
29331910	3-carboxy (para sulpho-phenyl)-5- p	0.141	0.588	316.10
29331920	1 (2,5- dichloro-4-sulpho phenyl)-3-	0.073	0.276	277.79
29331930	3-methyl-1(4-sulpho-O-toluyl-5-pyr	0.002	0.002	-23.94
29331940	Phenylmethylpyrazolone	0.539	0.402	-25.35
29331950	1-phenyl-5-pyrazolone-3-carboxylic	0.000	0.286	
29331960	1-(m-sulphophenyl)-3-pyrazolone	0.208	0.338	62.70
29331970	Analgin	2.251	1.366	-39.33
29331980	0xyphenbutazone	0.013	0.151	1029.11
29332910	Tinidazole	0.046	0.234	409.85
29332920	Metronidazole metronidiazole benz	7.416	5.375	-27.52
29332930	Mebendazole	0.118	0.002	-98.66
29332940	Dimetridazole	0.117	0.000	-100.00
29334190	Other Containing structure of quinc	0.000	0.029	
29335200	Malonylurea (barbituric acid) & its	2.899	3.629	25.19
29335300	Allobarbital and othr barbital comp	0.185	0.037	-79.86
29335400	Other derivatives of malonylurea (b	0.004	0.629	15786.54
29335500	Loprazolam, mecloqualone, metha	0.000	0.000	-100.00
29335910	Aminophylline(cordophylin)	0.367	0.120	-67.35
29335920	Trimethoprim	0.228	0.237	3.82
29335940	1-Amino-4-Methyl piperazine	0.012	0.019	54.15
29335950	Bispiribac Sodium(Herbicide)	0.000	0.010	5636.07
29339100	Alpra zolam, camazepam & other c	1.296	1.009	-22.11
29339200	Azinphos-methyl (ISO)	0.000	0.000	267.00
29349100	Aminorex, brotizolam and other lik	0.023	0.000	-98.24
29349200	Fentanyl	0.528	0.328	-37.97
29349910	Chloro Thiophene-2-Carboxylic Acic	0.333	0.568	70.71
29349930	Pramoxine	0.002	0.003	39.71
29349940	Other Hetrocyclic compounds	0.000	0.001	
29349990	Other Hetrocyclic compounds	401.574	383.782	-4.43
29351000	N-Methylperfluorooctane sulphona	0.022	0.000	-100.00
29355090	Other Perfluro Octane Suphonomic	0.049	0.954	1832.95
29359011	Sulphamethoxazole	0.025	0.020	-20.63
29359013	Sulphadiazine	0.414	0.526	27.13
29359014	Sulphadimidine	1.051	1.094	4.05
29359023	Sulphamoxole	0.000	0.000	-100.00

29359024	Sulfamide	0.485	0.580	19.80
29359040	Pyrazosuluron ethyl(Pesticide)	0.000	0.404	
29362100	Vitamins a and their derivatives	8.345	11.635	39.42
29362210	Vitamin b1i(thiamine, aneurine) & i	9.002	14.416	60.14
29362290	Other vitamin b1i and its drivatives	1.871	1.606	-14.16
29362310	Vitamin b2 (riboflavin, lactoplavin)	8.032	5.307	-33.93
29362390	Other vitamin b2 and its derivatives	3.381	1.956	-42.16
29362400	D-or dl-pantothenic acid (vitamin b	5.600	6.520	16.43
29362500	Vitamin b6 & its drvts	8.060	7.694	-4.55
29362610	Vitamin b12 (cynocobalamin)	15.448	20.325	31.57
29362690	Other vitamin b12 and its derivativ	0.986	2.523	155.95
29362700	Vitamin c (ascorbic acid) & its drvtv	10.022	17.366	73.27
29362800	Vitamin e and its derivatives	25.529	36.575	43.27
29362910	Folic acid (vitamin b9)	1.684	3.919	132.66
29362920	Nctnc acid & nctnmd(niacinamide/r	1.153	0.819	-28.99
29362930	Vitamin k (menaphthonum b.p.)	1.462	1.240	-15.22
29362940	Vitamin d	7.681	10.333	34.53
29362950	Vitamin h (bi0lin)	0.973	1.105	13.54
29362990	Other vitamins and thr drvtvs	12.123	7.688	-36.58
29369000	Other, incl. natural concentrts	0.640	1.406	119.60
29371100	Somatotropin, its drvtvs& strctl ana	0.000	0.003	822.15
29371200	Insulin and its salts	18.247	30.743	68.48
29371900	Other polypeptide hormones thr dt	25.710	38.319	49.04
29372100	Cortisone,hydrocortisone,predniso	25.098	20.882	-16.80
29372200	Halgntd drvtvs of corti costeroidal	16.804	15.440	-8.12
29372300	Oestrogens and progestogens	35.861	32.741	-8.70
29372900	Othr steroidal hormons thr drvtvs a	62.318	59.322	-4.81
29373100	Epinethrine	0.000	0.001	
29375000	Prostaglandins, tiromboxames& leu	3.793	2.381	-37.23
29379011	Epinethrine	0.001	0.003	158.69
29379019	Other Catecholamine hormones, th	3.174	2.705	-14.78
29379020	Amino acide Derivatives	7.902	4.574	-42.12
29379090	Other Amino acide Derivatives	34.554	35.820	3.66
29381000	Rutoside (rutin) and its derivatives	3.833	3.038	-20.75
29389010	Digoxin	0.026	0.112	325.89
29389020	Digitalis glycosides	0.086	0.024	-71.44
29389090	Other glycosides ntrl/rprdcd by syn	42.263	37.813	-10.53
29391100	Concentrates of poppy straw cmpn	13.157	1.824	-86.14
29392010	Quinine alkaloids	0.404	0.505	25.07
29392020	Quinine hydrochloride	0.004	0.294	7535.87
29392030	Quinine sulphate	0.247	0.199	-19.68
29393000	Caffeine and its salts	12.693	20.721	63.25
29394100	Ephedrine & its salts	0.006	0.089	1285.05
29394300	Cathine(INN) & its salts	0.000	0.002	370.16
29394400	Norephedrine and its salts	0.001	0.015	1766.46
29394500	Levo Methaphatamine	0.001	0.000	-100.00
29394900	Other ephedrives and thr salts	0.390	0.526	34.68
29395900	Other theophylline and aminophyll	1.834	3.149	71.70
29396190	Other ergometrine salts	0.096	0.025	-73.44
29396210	Ergotamine tartarate	0.636	0.000	-100.00

29396290	Other ergotamine salts	0.036	0.000	-100.00
29396900	Other alkaloids of rye ergot & drvtv	2.619	1.631	-37.71
29397200	Cocaine, ecgonine, levometamfetar	0.255	0.001	-99.77
29397900	Other of Vegitable origin	3.059	5.836	90.75
29398000	Non Vegetable Alkaloids	6.197	2.341	-62.23
29411010	Penicillins and its salts	134.909	69.315	-48.62
29411020	Ampicilline & its salts	0.304	0.042	-86.05
29411030	Amoxycilline & its salts	27.463	21.051	-23.35
29411040	Cloxacilline & its salts	0.402	0.394	-1.87
29411050	6 - apa	253.586	198.502	-21.72
29411090	Other penicillins & thr drvtvs wth a	49.510	51.779	4.58
29412010	Streptomycins	3.907	2.889	-26.06
29412090	Other streptomycine & drvtvs, salts	1.732	1.179	-31.94
29413010	Doxycylime & its salts	12.064	16.111	33.54
29413020	Tetracycline/oxytetra - cycline & hr	5.961	7.086	18.87
29413090	Other tetracyclines & thr drvtvs slts	13.147	13.051	-0.73
29414000	Chloramphenicol & its drvtvs slts th	1.453	0.227	-84.40
29415000	Erthromycin & its drvtvs slts thereo	94.227	110.335	17.10
29419011	Rifampicin	20.198	36.010	78.29
29419013	Rifa S or Rifa S Sodium (Rifaint)	8.565	23.826	178.19
29419014	1-Amino-4-Methyl piperazine (Rifai	0.076	0.000	-100.00
29419019	Other rifampicin and its salts	31.403	35.246	12.24
29419020	Cephalexin & its salts	21.396	16.869	-21.16
29419030	Ciprofloxacine & its salts	6.058	3.302	-45.49
29419040	Gentamycin & its salts	4.273	4.224	-1.15
29419050	Neomycin	1.791	1.951	8.94
29419060	Norfloxacin & its salts	6.971	3.158	-54.69
29419090	Other antibiotics	444.130	451.237	1.60
29420011	Cefadroxil	1.399	0.622	-55.58
29420012	Ibuprofane	3.635	5.232	43.92
29420013	Nifedipine	0.010	0.070	612.10
29420014	Ranitidine	0.114	0.189	65.93
29420015	Danes salt of D(-) phenyl glycine	11.738	10.529	-10.30
29420016	Timolo maleate, terbutoline sulpha	15.878	8.881	-44.07
29420021	Timolol maleate	0.155	0.136	-11.90
29420022	Terbutoline sulphate	0.000	0.023	
29420023	D(-) phenyl glycin chloride HCL (DP	0.000	0.037	
29420025	Amitryptyline hcl	0.029	0.000	-100.00
29420026	Cysteanune hcl	1.644	2.340	42.32
29420027	Atenolol, propronalol	1.017	0.827	-18.76
29420032	Cimetidine	0.549	0.258	-52.99
29420034	Famotidine	0.203	0.305	50.12
29420090	Other diloxanide furoate, cimetidin	188.335	186.544	-0.95
96020030	Gelatin capsules,empty	3.043	2.515	-17.33
Grand Total		2564.625	2466.808	-3.81

EXPORTS OF BULK DRUGS APRIL TO OCTOBER

Value in Mn $

HS code	Description	2024-25	2025-26	Groth %
17023010	Glucose liquid	31.050	29.649	-4.51
17023020	Glucose solid	6.668	4.003	-39.96
17023031	Dextrose,solid	9.830	9.975	1.47
17023039	Dextrose other than solid	0.220	0.196	-10.74
17024039	Dextrose other than solid	0.079	0.050	-37.58
29051410	Ethambutol, ethambutol hcl	4.758	2.707	-43.11
29051420	Salbutamol sulphate	7.148	6.433	-10.01
29054300	Mannitol	3.570	4.035	13.03
29054400	D-glucitol (sorbitol)	36.277	37.880	4.42
29071930	Thymol	5.401	3.933	-27.17
29072200	Hydroquinone	5.203	6.930	33.19
29095010	Guaiacol	1.072	1.416	32.05
29124920	Heliotropin (piperonyl aldehyde)	0.000	0.000	-100.00
29124940	3,4,5-trimethoxy-benzaldehyde	1.544	1.211	-21.58
29154010	Monochloroacetic acide their salts and e	8.057	6.917	-14.15
29163120	Benzyl Benzoate	3.491	1.991	-42.97
29163150	Benzocaine (ethylpara-amino benzoate)	1.139	2.081	82.68
29163400	Phenyl acetic acid	0.730	0.698	-4.29
29171940	Ferrous fumerate	4.792	4.363	-8.94
29171970	Ethoxy methylene malonate, diethyl ma	0.004	0.164	4160.80
29181120	Calcium lactate	0.115	0.095	-17.53
29181320	Metroprolol tartrate	5.916	5.562	-5.99
29181510	Potassium citrate	1.794	1.436	-19.92
29181520	Sodium citrate	5.839	6.744	15.50
29181550	Ferric ammonium citrate	0.361	0.684	89.71
29181610	Calcium gluconate	4.218	3.097	-26.58
29181620	Ferrous gluconate	0.767	0.372	-51.46
29182110	Salicylic acid	1.688	2.062	22.17
29182120	Sodium salicylate	1.696	1.302	-23.26
29182200	0-acetylsalicylic acid its salts and estrs	0.896	1.005	12.17
29182310	Methyl salicylate	4.418	4.904	11.00
29182320	Amino salicylate	0.360	0.378	4.82
29183030	Nalidixic acid	1.198	0.605	-49.48
29199010	Glycerophosphoric acid	0.018	0.042	127.09
29199030	Iron glycerophosphate	0.041	0.013	-67.63
29214250	Herbicide	0.000	12.778	
29214600	amfetamine INN and its related apis	16.278	39.991	145.67
29215110	o phenylanediamine	0.514	0.582	13.28
29215120	M-phenylenediamine (m-di aminobenze	4.894	15.358	213.81
29215130	P-phenylenediamine	6.800	4.493	-33.92
29215170	Para amini acetanalide	0.135	0.271	100.35
29223100	Amfepra none(inn), methdone & morm	0.317	0.629	98.69
29224100	Lysine and its esters salts thereof	1.196	2.327	94.60
29224210	Glutamic acid	0.118	0.170	43.95
29224220	Monosodium glutamate (aginamoto)	0.406	0.331	-18.52
29224400	Tilidine (INN) and its salts	0.227	0.038	-83.45

29224910	Amino acetic acid (glycine)	13.514	8.875	-34.33
29224920	N-methyl taurine	0.019	0.034	76.30
29225011	Para-amino-salicylic acid	0.001	0.003	120.69
29225013	Procaine hydrochloride	0.041	0.086	112.34
29225015	L-tyrosine(p-hydroxyphenylamine)	0.009	0.002	-82.18
29225021	Frusemide	11.886	10.069	-15.29
29225024	D0mperid0ne	4.881	4.265	-12.62
29231000	Choline and its salts	6.391	4.356	-31.84
29241100	Meprobamate (inn)	2.434	0.355	-85.42
29242910	Acetanilide	0.134	0.081	-39.37
29242960	Pyrazinamide(pyrazine carboxamide)	3.457	2.131	-38.34
29242970	Pretilachlor	0.033	9.735	29367.52
29242980	Paracetamol	40.332	45.858	13.70
29262000	1-Cyanoguanidine (dicyandiamide)	0.002	0.100	6143.86
29263000	Fenproporex (inn) & its salts	0.037	0.000	-99.41
29264000	Alpha-phenylacetoacetonitrile	0.000	0.012	
29280010	Isoniazid	0.662	0.563	-14.95
29309014	Industrial chemical	0.000	3.156	
29309040	L-cystine (alpha-amino beta-thiopropion	1.644	0.000	-100.00
29322010	Coumarin,mthylcoumrn & ehylcoumrn-l	5.949	6.345	6.66
29329300	3 -Carboxy(Para sulpho- phenyl)-5-Pyraz	0.081	0.000	-100.00
29329600	Carbofuran	0.002	0.341	19557.63
29331100	Phenazone (antipyrin) and its derivative	6.159	5.857	-4.89
29331910	3-carboxy (para sulpho-phenyl)-5- pyraz	1.092	1.277	16.90
29331920	1 (2,5- dichloro-4-sulpho phenyl)-3-met	0.493	6.464	1212.17
29331930	3-methyl-1(4-sulpho-O-toluyl-5-pyrazolo	0.671	0.082	-87.86
29331940	Phenylmethylpyrazolone	0.022	0.024	9.79
29331950	1-phenyl-5-pyrazolone-3-carboxylic acid	0.019	0.002	-87.60
29331960	1-(m-sulphophenyl)-3-pyrazolone	0.000	0.059	
29332910	Tinidazole	1.865	2.245	20.42
29332920	Metronidazole metronidiazole benzoate	8.517	9.958	16.92
29332930	Mebendazole	3.141	4.328	37.81
29332940	Dimetridazole	4.702	2.221	-52.76
29334100	Levorphanol (inn) and its salts	1.301	0.000	-100.00
29334110	Levorphanol (inn) and its salts	0.000	0.657	
29334190	Other Containing structure of quinoline	0.000	2.794	
29335200	Malonylurea (barbituric acid) & its sals	0.128	0.790	518.39
29335300	Allobarbital and othr barbital compnds a	2.649	1.372	-48.21
29335400	Other derivatives of malonylurea (barbit	1.010	1.106	9.43
29335910	Aminophylline(cordophylin)	0.445	0.328	-26.27
29335920	Trimethoprim	7.512	7.920	5.43
29335930	Diethyl carbanazine citrate	0.401	0.187	-53.45
29335940	1-Amino-4-Methyl piperazine	1.941	4.864	150.64
29335950	Bispiribac Sodium(Herbicide)	0.157	5.240	3233.53
29339100	Alpra zolam, camazepam & other cmpn	12.062	11.636	-3.53
29339200	Azinphos-methyl (ISO)	0.105	0.192	82.58
29349100	Aminorex, brotizolam and other like cm	3.801	9.145	140.58
29349200	Fentanyl	0.061	0.543	784.94
29349910	Chloro Thiophene-2-Carboxylic Acid	0.044	0.038	-14.34
29349930	Pramoxine	0.028	6.419	22794.81

29349940	Other Hetrocyclic compounds	0.000	23.209	
29349990	Other Hetrocyclic compounds	330.185	408.638	23.76
29351000	N-Methylperfluorooctane sulphonamide	0.045	0.269	493.56
29352000	N-Ethylperfluorooctane sulphonamide	0.000	0.041	
29355010	Flubendiamide(insecticide)	0.004	0.000	-100.00
29355090	Other Perfluro Octane Suphonomides	0.998	0.928	-7.04
29359011	Sulphamethoxazole	20.206	17.075	-15.50
29359012	Sulphafurazole	0.006	0.002	-71.59
29359013	Sulphadiazine	3.126	3.802	21.59
29359014	Sulphadimidine	0.054	0.018	-66.20
29359015	Sulphacetamide	0.006	0.001	-91.25
29362100	Vitamins a and their derivatives	13.393	11.635	-13.13
29362210	Vitamin b1i(thiamine, aneurine) & its sa	5.636	5.843	3.66
29362290	Other vitamin b1i and its drivatives	13.337	8.568	-35.75
29362310	Vitamin b2 (riboflavin, lactoplavin) and i	6.250	7.600	21.60
29362390	Other vitamin b2 and its derivatives	0.132	0.087	-34.30
29362400	D-or dl-pantothenic acid (vitamin b3 or v	0.499	0.239	-52.17
29362500	Vitamin b6 & its drvts	0.093	0.583	529.22
29362610	Vitamin b12 (cynocobalamin)	0.431	0.997	131.17
29362690	Other vitamin b12 and its derivatives	2.371	6.812	187.25
29362700	Vitamin c (ascorbic acid) & its drvtvs	6.303	7.118	12.94
29362800	Vitamin e and its derivatives	11.733	14.918	27.14
29362910	Folic acid (vitamin b9)	3.217	3.689	14.64
29362920	Nctnc acid & nctnmd(niacinamide/niacir	53.637	45.278	-15.58
29362930	Vitamin k (menaphthonum b.p.)	3.174	5.409	70.46
29362940	Vitamin d	12.668	17.264	36.28
29362950	Vitamin h (bi0lin)	0.552	0.281	-48.99
29362990	Other vitamins and thr drvtvs	10.716	10.489	-2.12
29369000	Other, incl. natural concentrts	23.039	32.096	39.31
29371100	Somatotropin, its drvtvs& strctl analogv	0.210	0.067	-68.14
29371200	Insulin and its salts	25.984	24.869	-4.29
29371900	Other polypeptide hormones thr dtvtvs	20.280	23.734	17.03
29372100	Cortisone,hydrocortisone,prednisone (d	7.449	7.663	2.87
29372200	Halgntd drvtvs of corti costeroidal	21.290	18.352	-13.80
29372300	Oestrogens and progestogens	14.172	14.410	1.68
29372900	Othr steroidal hormons thr drvtvs and st	66.186	66.023	-0.25
29375000	Prostaglandins, tiromboxames& leukotr	0.764	0.871	14.02
29379019	Other Catecholamine hormones, their d	0.814	0.395	-51.47
29379020	Amino acide Derivatives	14.416	7.990	-44.58
29379090	Other Amino acide Derivatives	17.048	12.328	-27.68
29381000	Rutoside (rutin) and its derivatives	0.002	0.001	-47.68
29389010	Digoxin	1.308	0.863	-34.03
29389090	Other glycosides ntrl/rprdcd by synthsis	26.340	43.059	63.48
29391100	Concentrates of poppy straw cmpnds of	0.016	0.132	703.71
29392010	Quinine alkaloids	0.000	0.000	0.00
29392020	Quinine hydrochloride	1.231	2.518	104.44
29392030	Quinine sulphate	0.715	0.247	-65.44
29392040	Chl0r0quine ph0sphate	0.853	1.007	18.01
29393000	Caffeine and its salts	34.438	38.305	11.23
29394100	Ephedrine & its salts	1.247	1.496	19.96

29394400	Norephedrine and its salts	1.394	1.108	-20.54
29394500	Levo Methaphatamine	0.075	0.000	-99.87
29394900	Other ephedrives and thr salts	1.397	1.120	-19.83
29395900	Other theophylline and aminophylline th	20.596	26.959	30.90
29396110	Ergometrine	0.000	0.000	-100.00
29396190	Other ergometrine salts	0.004	0.000	-100.00
29396900	Other alkaloids of rye ergot & drvtvs	1.423	0.971	-31.73
29397900	Other of Vegitable origin	70.005	94.209	34.57
29398000	Non Vegetable Alkaloids	8.641	7.703	-10.86
29411010	Penicillins and its salts	0.015	0.084	449.01
29411020	Ampicilline & its salts	15.020	13.787	-8.21
29411030	Amoxycilline & its salts	112.039	90.416	-19.30
29411040	Cloxacilline & its salts	13.231	11.917	-9.93
29411050	6 - apa	0.000	0.000	10300.00
29411090	Other penicillins & thr drvtvs wth a pent	50.999	46.833	-8.17
29412010	Streptomycins	0.007	0.032	351.55
29412090	Other streptomycine & drvtvs, salts	0.017	0.290	1565.85
29413010	Doxycylime & its salts	0.404	0.572	41.49
29413020	Tetracycline/oxytetra - cycline & hr salts	1.493	0.582	-61.02
29413090	Other tetracyclines & thr drvtvs slts	0.299	0.226	-24.28
29414000	Chloramphenicol & its drvtvs slts thereo	1.383	1.302	-5.87
29415000	Erthromycin & its drvtvs slts thereof	62.184	54.407	-12.51
29419011	Rifampicin	4.946	8.232	66.44
29419013	Rifa S or Rifa S Sodium (Rifaint)	0.201	0.000	-100.00
29419019	Other rifampicin and its salts	5.721	2.943	-48.56
29419020	Cephalexin & its salts	6.750	3.424	-49.27
29419030	Ciprofloxacine & its salts	11.711	13.835	18.14
29419040	Gentamycin & its salts	0.029	0.008	-73.15
29419050	Neomycin	0.011	0.070	505.19
29419060	Norfloxacin & its salts	0.865	1.280	47.89
29419090	Other antibiotics	326.117	250.582	-23.16
29420011	Cefadroxil	12.243	12.003	-1.96
29420012	Ibuprofane	44.204	39.392	-10.89
29420013	Nifedipine	1.046	1.720	64.46
29420014	Ranitidine	5.593	4.757	-14.94
29420015	Danes salt of D(-) phenyl glycine	0.000	0.000	-100.00
29420016	Timolo maleate, terbutoline sulphate, ir	0.001	0.022	2422.74
29420021	Timolol maleate	3.046	2.603	-14.55
29420022	Terbutoline sulphate	0.701	0.604	-13.83
29420024	Imipramine hcl	0.381	0.538	41.36
29420025	Amitryptyline hcl	3.387	3.112	-8.12
29420026	Cysteanune hcl	0.000	0.000	-100.00
29420027	Atenolol, propronalol	6.508	6.745	3.64
29420031	Diloxanide furoate	1.372	2.034	48.20
29420032	Cimetidine	0.001	0.035	4271.39
29420033	Oxyclozanide	3.551	5.113	44.00
29420034	Famotidine	7.574	8.039	6.13
29420090	Other diloxanide furoate, cimetidine, fa	617.956	614.371	-0.58
96020030	Gelatin capsules,empty	51.007	48.704	-4.52
	Grand Total	2593.201	2698.639	4.07