Vikram™
THERMO INDIA LIMITED
SINCE 1985

APION®
ION EXCHANGE POLYMER

CHEMISTRY OF TRUST

History

1985
Inception

1989
Expansion

1995
IPO & Listing of Vikram

1997
Started DRUGCOAT

2006
New cGMP - compliant manufacturing facility.

2014
India's First EXCIPACT Certified Company

Credentials

Company has state of the art manufacturing facility certified with International EXCiPACT GMP certificate. A combine certificate of IPEC EUROPE and IPEC USA for manufacturing international standard pharma Polymers (EXCIPIENTS). EXCiPACT, Good Manufacturing Practice, ISO 9001:2008 and Halal certificate and many multinational company audit approval enabling pharmacopeial GMP International quality product manufacturing in India. Vikram Thermo (India) Limited filed US-DMF approvals across its product range.

APION® Ion exchange polymers

APION® Ion exchange polymers address two critical needs in modern pharmaceutical formulations: taste masking of bitter APIs and rapid disintegration. With growing demand for patient-friendly dosage forms, especially in pediatric and geriatric segments, taste acceptability is as important as therapeutic efficacy.
APION® efficiently bind bitter-tasting APIs, significantly reducing perception on the palate and ensuring better compliance without altering the drug's pharmacological profile.

"Advancing patient centric formulations."

2018
Became Asia's largest manufacturing capacity.

2022
New flagship product launch

2025
Launched advanced R&D initiatives

Mission

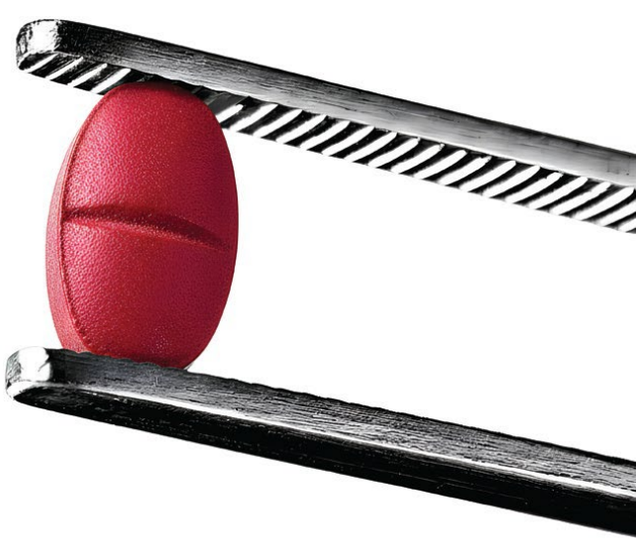
Our mission is to be a global leader in excipients, driven by advancement, reliability & expertise. Delivering international quality, cost-effective solutions every time.

Vision

To create excipients that improve lives, safeguard the planet, & leave a lasting impact on communities & industries worldwide.

Beyond palatability, APION® promote faster disintegration and dissolution, enabling quicker onset of action and enhanced bioavailability. Their versatility makes them ideal for innovative oral dosage forms, including orally disintegrating tablets (ODTs), chewables, suspension and dry syrups.

By integrating APION®, manufacturers gain a competitive advantage, producing formulations that combine efficancy with patient convenience. With proven reliability, consistent performance, and multifunctional benefits, APION® is shaping the future of excipient technologies in the pharmaceutical industry.



APION®T Series

Ion exchange polymers for taste masking

Ion exchange polymers replace their own ions with desirable charged ions in solution. When a charged API interacts with the polymer, ionic bonding forms a resinate, its strength influenced by factors like particle size, crosslinking, pH, and pKa values of both polymers and API.

Finer polymers enhance surface area and diffusion, while higher crosslinking may limit drug loading. Establishing the optimal binding ratio and process parameters ensures efficient taste masking and reliable, patient-friendly formulations.

Advantages of ion exchange polymers for taste masking

Effective bitterness suppression: Stable drug resinate complexes prevent drug release in saliva, eliminating bitter after-taste.

Immediate release: Complex dissociates quickly in stomach fluid for immediate therapeutic action.

Simple & cost-effective: No additional coating or complex manufacturing steps required.

Versatility: Compatible with a wide range of cationic and anionic APIs.

Enhanced stability: Protects APIs against moisture, heat, and light.

Formulation flexibility: Easily incorporated into tablets, capsules, suspensiondry syrups, orally disintegrating dosage forms.

Improved patient compliance: Enhances palatability, especially for pediatric and geriatric patients.

APION® T SERIES

Product	Description	Physical Form	Functional Group	Ionic Form	Moisture Content	Application
APION® T51	Polacrilex polymers	Powder	$-COO^-$	H^+	≤ 5.0	Taste masking of bitter drugs: Dextromethorphan HBr, Pseudoephedrine HCl, Norfloxacin, Ofloxacin, Dicyclomine HCl Key raw material for nicotine polacrilex USP Stabilization of Vitamin B_{12}
APION® TA 42	Weak catonic exchange polymers	Powder	$-COO^-$	K^+	≤ 10.0	Taste masking of bitter drugs like Azithromycin di-Hydrate
APION® TC 42	Weak catonic exchange polymers	Powder	$-COO^-$	H^+	≤ 5.0	Taste masking of bitter drugs like Cefpodoxime Proxetil
APION® DT 44	Polacrilin potassium USP	Powder	$-COO^-$	H^+	≤ 10.0	Taste masking of bitter drugs like Ciprofloxacin HCl, Roxithromycin, Chloroquine Phosphate, Zinc Gluconate, Pyrimethamine, Tadalafil, Zinc Sulphate

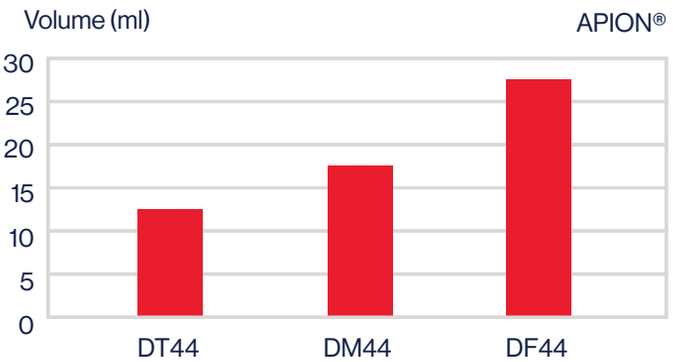
APION® D Series

Rapid tablet disintegration

APION® D Series is a highly pure, weak acid cation exchange polymers supplied as a fine, free flowing dry powder in the potassium form. It acts as a super-fast pharmaceutical disintegrant, delivering rapid tablet breakup through swelling when exposed to water or gastrointestinal fluids. Its unique mechanism creates a strong bursting effect for superior disintegration performance.

Unlike gums that may dissolve or form sticky masses upon hydration, APION® D Series swells uniformly, promoting even disintegration without stickiness. It performs effectively in both hydrophobic and hydrophilic formulations, while maintaining excellent compressibility during tablet manufacturing. Its outstanding efficiency makes it a preferred choice over conventional disintegrants.

Swelling index

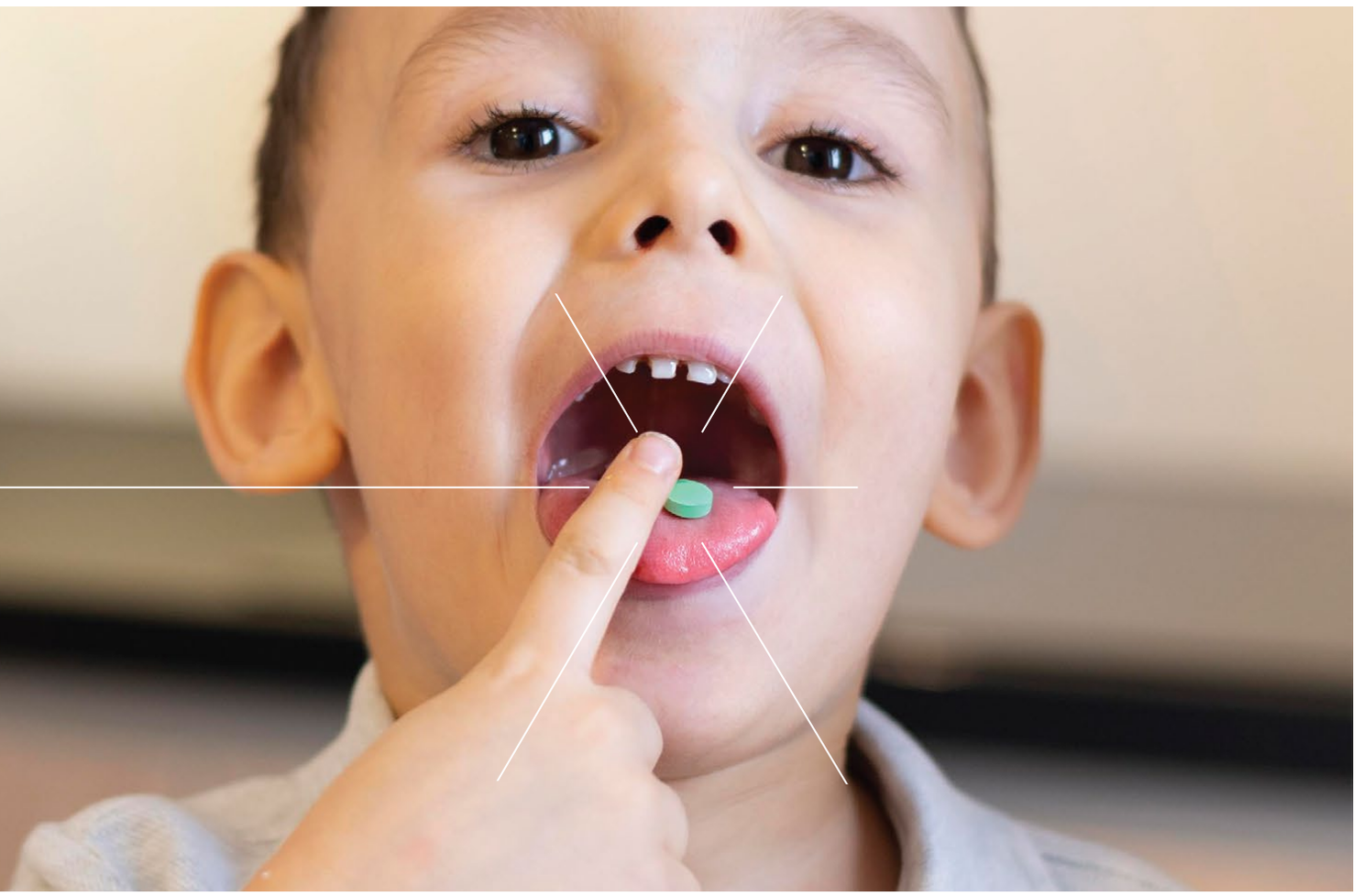


Swelling is a primary mechanism for tablet disintegration. As a disintegrant absorbs fluid, it expands, generating internal pressure that forces tablet particles apart, leading to rapid breakup.

The effectiveness of a disintegrant is measured by its swelling volume. An ideal disintegrant exhibits high swelling without affecting the tablet's other physicochemical properties. Swelling volume is determined by immersing the dry polymer in a suitable solvent for a set time and measuring the increase in volume once full swelling occurs.

APION® D SERIES

Product	Description	Physical Form	Functional Group	Ionic Form	Moisture Content	Application
APION® DF 44	Polacrilin Potassium USP	Powder	$-COO^-$	K^+	≤ 10.0	Superfast Tablet Disintegration
APION® DM 44	Polacrilin Potassium USP	Powder	$-COO^-$	K^+	≤ 10.0	Tablet Disintegration
APION® DT 44	Polacrilin Potassium USP	Powder	$-COO^-$	K^+	≤ 10.0	Tablet Disintegration /Taste Masking



APION® A Series

Advanced Ion exchange polymers for controlled & therapeutic applications

The APION® A Series is a new generation of high-performance ion exchange polymers engineered for delayed release, taste masking, and therapeutic ion exchange. With precise ionic functionality and optimized physical characteristics, they enable targeted drug delivery and improved patient outcomes.

Available in sodium, calcium, and chloride forms, these polymers support diverse applications, including sustained or delayed release of APIs such as Dextromethorphan HBr and Pseudoephedrine HCl, as well as hyperkalemia management and cholesterol reduction.

Consistent quality, pharmacopoeial compliance, and controlled moisture content ensure reliable performance across immediate and modified release systems, making APION® A Series ideal for modern pharmaceutical formulations.

APION® A SERIES

Product	Description	Physical Form	Functional Group	Ionic Form	Moisture Content	Application
APION® A04	Sodium Polystyrene Sulphonate USP	Buff / Brown Powder	$-SO_3^-$	Na^+	NMT 10	Sustained / Delayed Release of Drugs like Dextromethorphan HBr, Pseudoephedrine HCl Treatment of Hyperkalemia
APION® A48	Calcium Polystyrene Sulphonate BP/JP	Cream Powder	$-SO_3^-$	Ca^{++}	NMT 10	Sustained / Delayed Release of Drugs like Dextromethorphan HBr, Pseudoephedrine HCl Treatment of Hyperkalemia
APION® A50	Cholestyramine Resin USP	White Powder	$-N^+ R_3$	Cl^-	NMT 12	Cholesterol Reduction

Achieve controlled drug release with APION® A Series

Resinate preparation

Step 1 Take deionized water (2–4× the total weight of polymers and API) in a beaker.

Step 2 Add APION® and stir for 30 minutes.

Step 3 Add the API and stir for 2-3 hours at moderate speed.

Step 4 Allow the resinate to settle.

Step 5 Wet resinate can be used directly for suspension preparation.

Step 6 For dry formulations, dry the wet mass at suitable temperature until desired moisture content is achieved.

Addition of APION®

Addition of API

Drying

The Vikram Thermo Impact

"Vikram's advance coating technology improved patient adherence which directly translated into accelerated business growth."

- CEO of a Multinational Pharma Company.

Real world result

- Increased manufacturing yield
- Reduced rework and rejection
- Increased savings on cost
- Decreased development time

Impact on your business

Regulatory confidence by simplified documentation and compliance for approvals and exports.

Predictable supply ensures consistent inventory, reducing emergency sourcing and production delays.

Faster time-to-market by reducing formulation iterations and shortens development cycles.

Lower risk and fewer rejects by minimizing batch failures.

Improved product stability extending shelf life and reduces degradation issues.

Higher patient acceptance by enhancing taste-masking and appearance to improve adherence.

How we deliver value

R&D partnership provides formulation trials and scale-up support in our labs.

Technical service offers on-site trials, process optimization, and tech transfer assistance.

Product range includes ready-to-use systems and custom polymer solutions.

Regulatory pack covers COAs, stability protocols, DMF support, and regulatory documentation.

Reliable manufacturing ensures EXCiPACT GMP, ISO, and HALAL certifications with consistent quality.

How we can help you next

- ○ **Sample & compatibility testing:** We'll run tests & provide a detailed report.
- ○ **ROI projection:** Model savings from switching coatings (yield, time, rejects).
- ○ **Regulatory support:** Prepare complete documentation for export approvals.

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