VizMark
SMART VISUAL MARKERS

VM1 Breast Marker - Physician Summary

The VM1 Breast Marker was developed by Dr. Michael Nelson, radiologist and researcher at the University of Minnesota, to address a key limitation in breast MRI imaging: magnetic susceptibility artifacts caused by metallic markers. VM1 is specifically engineered to enhance MRI clarity, improving diagnostic accuracy in breast cancer care.

Key Features of VM1

Innovative Design:

VM1 features a PEEK (polyether ether ketone) cap and vial, incorporating barium sulfate and a carbon marker, combined with a drop of gadolinium that increases MRI signal intensity. This design ensures bright, artifact-free MRI visibility while maintaining compatibility with other imaging modalities, including X-ray and ultrasound.

Non-Metallic and Non-Allergenic:

Unlike traditional metallic markers (e.g., titanium or stainless steel), VM1 is radiolucent, does not interfere with imaging, and avoids the risk of allergic reactions or patient discomfort.

Marker Stability:

Seven years of clinical use have demonstrated no migration or positional instability, making VM1 a reliable option for permanent placement during ultrasound-guided biopsies.

Optimized for Dense and High-Risk Breast Tissue:

VM1 provides superior MRI sensitivity, particularly beneficial for high-risk patients and women with dense breast tissue, where MRI plays a critical role in detection and treatment planning.

Benefits for Physicians and Patients

MRI-Optimized Design:

Enables uncompromised diagnostic clarity with no interference or artifacts.

Long-Term Positional Integrity:

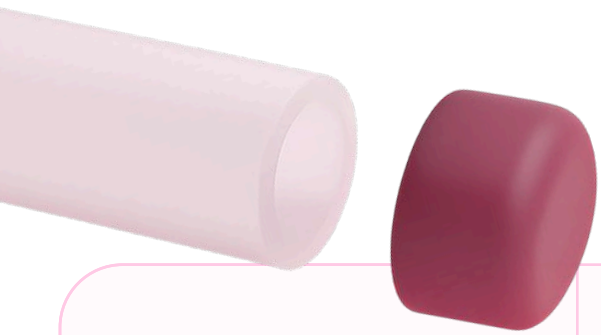
Assures consistent marker placement over time.

Multi-Modality Visibility:

Provides flexibility for diagnosis, surgical planning, and radiotherapy.

Enhanced Patient Safety:

Non-metallic and non-allergenic materials reduce risk and improve comfort.



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	VM1 PEEK Marker	Metallic Markers
Material Composition	PEEK infused barium sulfate, carbon	Titanium, nickel, stainless steel
MRI Artifact	Radiolucent, non-interfering with all imaging provides a strong signal, brighter overtime	Signal void produces Artifacts with potential masking of tissue
MR Spectroscopy	No Distortion	Strong Distortion
Tomosynthesis	No Distortion or shadowing	Shadowing or streaking artifacts
Visibility of Modalities	Designed for MRI – Visible on all modalities	Designed for Xray, Ultrasound limited MRI with artifact
Surgical Radiotherapy	Accurate delineation of tumor margins	Compromised by voids tumor shadowing
Biocompatibility	PEEK non-allergic, no discomfort	Metallic may produce allergic reaction discomfort