#### UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MYLAN INSTITUTIONAL INC., Petitioner

V.

FRESENIUS KABI USA, LLC, Patent Owner.

U.S. Patent No. 9,168,238 to Jiang *et al.* Issue Date: October 27, 2015
Title: Levothyroxine Formulations

Inter Partes Review No.: IPR2017-00643

Petition for *Inter Partes* Review of U.S. Patent No. 9,168,238 Under 35 U.S.C. §§ 311-319 and 37 C.F.R. §§ 42.1-.80, 42.100-.123

Mail Stop "PATENT BOARD"
Patent Trial and Appeal Board
U.S. Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450



## **TABLE OF CONTENTS**

				Page			
I.	INTRODUCTION						
II.	OVE	OVERVIEW					
III.	STANDING (37 C.F.R. § 42.104(a); PROCEDURAL STATEMENTS)						
IV.	MANDATORY NOTICES (37 C.F.R. § 42.8(a)(1))						
	A. Each Real Party-In-Interest (37 C.F.R. § 42.8(b)(1))						
	B. Notice of Related Matters (37 C.F.R. § 42.8(b)(2))						
		1.	Judicial Matters	3			
		2.	Administrative Matters	4			
	C.		gnation of Lead and Back-Up Counsel and Service (37 R. §§ 42.8(b)(3), 42.8(b)(4), 42.10(a), and 42.10(b)):	4			
V.	STA' REA	STATEMENT OF THE PRECISE RELIEF REQUESTED AND THE REASONS THEREFORE (37 C.F.R. § 42.22(a))					
VI.	THE	'238 I	PATENT	5			
	A.	Clair	n Construction	5			
VII.			OF ORDINARY SKILL IN THE ART & STATE OF THE	8			
VIII.	IDEN	NTIFIC	CATION OF CHALLENGE (37 C.F.R. § 42.104(b))	9			
IX.	INVALIDITY ANALYSIS						
	A.	The	Scope and Content of the Prior Art	11			
		1.	Instability of Levothyroxine Sodium Compositions	11			
		2.	Mannitol was the Most Commonly Used Bulking Agent and was Used in Lyophilized Levothyroxine Sodium Compositions	16			



	3.	Mannitol's Impact on the Stability of Lyophilized Levothyroxine Sodium Compositions was Known	18		
B.	Ground 1: Claims 1–30 Would Have Been Obvious over the Abbott Label, Brower, Baheti, and Collier				
	1.	Claim 1			
		<ul> <li>a. It Would Have Been Obvious to Use "about 100 Micrograms of Levothyroxine Sodium"</li></ul>	23 24 24		
	2.	Claims 11 and 21			
	3.	Claims 2–3, 12–13, and 22–23: Amount of Levothyroxine Sodium Converted to Liothyronine	39		
	4.	Claims 4, 14 and 24: Amount of Mannitol	43		
	5.	Claims 5, 15 and 25: Pharmaceutically Acceptable Liquid Carrier	44		
	6.	Claims 6, 16 and 26: Concentration of Levothyroxine Sodium	44		
	7.	Claims 7, 17 and 27: Method of Providing Levothyroxine to a Patient in Need	45		
	8.	Claims 8, 9, 18, 19, 28, and 29: Dosage of Levothyroxine	16		



	9.	Claims 10, 20, and 30: Phosphate Buffer	47	
C.	Ground 2: Claims 1–30 Would Have Been Obvious over the APP Label, Brower, Baheti, and Collier			
	1.	Claims 1, 11, and 21		
		<ul> <li>a. A POSA Would Have Been Motivated to Reduce the Amount of Mannitol Below the 10 Milligram Amount Used in Conventional Compositions.</li> <li>b. A POSA Would Have Had a Reasonable Expectation of Success.</li> </ul>		
	2.	Claims 2–3, 12–13, and 22–23: Amount of Levothyroxine Sodium Converted to Liothyronine	53	
	3.	Claims 4, 14, and 24: Amount of Mannitol	53	
	4.	Claims 5, 15 and 25: Pharmaceutically Acceptable Liquid Carrier		
	5.	Claims 6, 16 and 26: Concentration of Levothyroxine Sodium		
	6.	Claims 7, 17 and 27: Method of Providing Levothyroxine to a Patient in Need Thereof		
	7.	Claims 8, 9, 18, 19, 28, and 29: Dosage of Levothyroxine Sodium		
	8.	Claims 10, 20, and 30: Phosphate Buffer	56	
D.	Ground 3: Claims 1–30 Would Have Been Obviousness over the Abbott Label, APP Label, Brower, Baheti, and Collier			
	1.	Claims 1, 11 and 21		
		a. A POSA Would Have Been Motivated to Reduce the Amount of Mannitol	57	
	2.	Claims 2–3, 12–13, and 22–23: Amount of Levothyroxine Sodium Converted to Liothyronine		
	3	Claims 4 14 and 24: Amount of Mannitol	59	

		4.	Claims 5, 15 and 25: Pharmaceutically Acceptable Liquid Carrier	59
		5.	Claims 6, 16 and 26: Concentration of Levothyroxine Sodium	60
		6.	Claims 7, 17 and 27: Method of Providing Levothyroxine to a Patient in Need Thereof	61
		7.	Claims 8, 9, 18, 19, 28, and 29: Dosage of Levothyroxine Sodium	61
		8.	Claims 10, 20, and 30: Phosphate Buffer	62
	E.	Obje	ctive Indicia of Non-Obviousness	62
		1.	No Unexpected Results Over the Closest Prior Art	63
		2.	Commercial Success	67
X.	CON	ICLUS	SION	67

# DOCKET

# Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

# **Real-Time Litigation Alerts**



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## **Advanced Docket Research**



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

### **Analytics At Your Fingertips**



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

#### API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

#### **LAW FIRMS**

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

#### **FINANCIAL INSTITUTIONS**

Litigation and bankruptcy checks for companies and debtors.

### **E-DISCOVERY AND LEGAL VENDORS**

Sync your system to PACER to automate legal marketing.

