Safety Segment Business Briefing

Daicel Corporation

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This document is an English translation of a statement written originally in Japanese for reference. The Japanese original should be considered as the primary version.

Daicel	DAICEL Sustainable Value Together	
	FY2021 Net Sales Total Japan's market share No.1	World's market share No.1
Medical / Healthcare	Cosmetics ingredients such as 1,3-butylene glycol Naturally derived ingredients such as equol and Konjac ceramide Chiral columns, High-purity chiral reagents, Co-processed excipients such as orally disintegrating tablets	The
Smart	 Cellulose acetate for optical films Resist materials, Solvents for printed electronics High-performance optical films Optical devices, Semiconductor devices 	
Safety	Automobile safety parts such as airbag inflators , micro gas generators, and pyro-fuses	initiators
Materials	 Acetic acid, Acetic acid derivatives Cellulose acetate for applications other than optical films Acetate tow Organic chemicals such as Alicyclic-epoxy-resin, Caprolactone derivatives 	
Engineering Plastics	 43% Engineering plastics such as POM, PBT, PPS, LCP, COC Resin compound products such as SAN, MS, ABS resin, Polymer alloys Plastics processing products such as Polystyrene sheet, Coating films Water-soluble polymer 	
Others	Membrane separation systems Defense-related products	2

Products - Automotive Safety -





About Inflator



- \diamondsuit The "Inflator" is the most essential component that consist in an Airbag.
- To meet all the performance and quality requirements for Airbags, we now manufacture two types of Airbag inflators that utilize different methods, Pyrotechnic method and Hybrid method

Pyrotechnic method

- •Gas generation through combustion of propellant
- Propellant is the only method to generate gas to activate the inflator within a few millisecond.
- Widely used for driver and front passenger airbags.



Hybrid method

- •A combination of pyrotechnic and compressed gas methods.
- Widely used for side and side curtain airbags.



Global Network





History of Safety Systems Business





1970s	Research and development of automotive airbag		DSST (Thailand) begins production of inflators.			
	inflators begins.		DSTT (Thailand) begins production of initiators.			
1987	Daicel Safety Systems (DSS) is established.		Inflator recycle business is launched.			
1989	 Production of Inflators for Driver airbags begins. Production of non azide-based inflators for Driver airbags begins. 		DSSC (China) begins production of inflators.			
1997			DSSE (Europe) begins production of inflators.			
1998	Production of Hybrid inflators for Passenger airbags	2007	DSSK (Korea) is established.			
1990	begins.		DSTP (USA) is established.			
1999	Inflator Recycle Center is established.	2012	Special Devices, Inc. (USA/Thailand) is acquired.			
2000	Production of Hybrid inflators for Side airbags and	2013	DSSK (Korea) begins production of inflators.			
	Initiators begins.		DSSA AZ (USA) begins production of inflators.			
2001	Production of Dual-stage inflators for		DSSA Holdings (USA) is established.			
	Driver/Passenger airbags begins.		DSSI (India) is established.			
2002	2 Production of Stored-gas inflators for Curtain		DSTC (China) is established.			
	DSSA (USA) begins production of inflators.	2019	6 companies in USA are merged and renamed to DSSA .			

Net sales and Operating Profit in Safety segment

♦ The boost production of inflators cased by THE TAKATA AIRBAG SAFETY RECALL was ending from 2018 and the net sales and operating profit went down

⇒ radically improve the profit and aim to V-shaped recovery toward 2025



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Inflator sales trend and plan



Inflator Sales quantity



Cataloging and integration of products



◇Maintain and improve product competitiveness by integrating inflator models as a mediumterm goal (5 years)

YN4

ZE4

YN2

【The trend of Cataloging】

Single type for Driver & Front passenger



Dual type for Driver & Front passenger



1Y2023 1Y2022 1Y2023 1Y2024 1Y2025 1Y2026 1Y2027 1Y2028 1Y2029 1Y2030 1Y2021 1Y2022

YN5

ZES

YNS

YN4

=YN2

YN

ZES

ZE4

2F2

ZE

■ その対応

TY2021 TY2022 TY2023 TY2024 TY2025 TY2026 TY2027 TY2028 TY2029 TY2030

_		30 types 144 items	Reduced types less than half		10 types 85 items Estimation in Nov.2021		
Use		The current mass production			Use	Cataloging and integration of products	
DAB PAB	Single	EG, EH, EH5, EK, EL FE, FM, FM2, EK, FM4, EL					
				DAB PAB	Single	EK	FM6/7
	Dual ZA, ZD, ZD2, ZE, ZE2, ZE4 WE, YM, YN, YN2, YN4		Catalacian		Dual	YN5	ZE5
		Cataloging	SAB		NB	NX	
SAB/KAB CAB		LB, LE, LE2, NB		KAB CAB		TGD	LX
		CA, LH, LH2				LE3	



New Products

Utilization of One Time Energy



"ONE TIME ENERGY" A one-shot energetic force generated instantly, reliably, and safely



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Operating principle of Pyro-Fuse/Pyro-closer





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Operating principle of Pyro-Fuse/Pyro-closer







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