Bioplastics – Collection of Corporate Commitments and Targets in Japan

As of January 2021

1. Targets for Manufacturing and Sales of Bioplastic Finished Products

Industry		Company	Target product(s) and application	Substitute material	Target level	Target period	Reference URL
Manufacturing	Beverage	Asahi Group Holdings	PET bottles, plastic bottles, caps used for PET and plastic bottles, certain plastic containers and plastic cups (used for sales), etc.	eco-friendly materials, such as bio-based materials (including bio-based plastics) and recycled materials	Begin examinations for achieving a 100% conversion	2030	Asahi Group “3R + Innovation” https://www.asahigroup-holdings.com/en/csr/environment/products.html
		Asahi Soft Drinks	Plastic containers and packaging (PET bottles, labels, caps, plastic bottles)	Plant-derived materials (including bio-based plastics), recycled PET, and/or other eco-friendly materials	60% by weight	2030	Asahi Soft Drinks “Containers and Packaging 2030” https://www.asahigroup-holdings.com/en/csr/environment/products.html
		Coca-Cola (Japan) Company	All PET bottles	Sustainable materials (recycled PET resin and bio-based PET plastic)	All PET bottles will be made from recycled PET resin or bio-based PET plastic	2025	Coca-Cola (Japan) Company "Sustainability Report 2020" https://www.cocacola.co.jp/sustainability/en
					Sustainable materials to be made 100% (10% bio-based PET plastic, 90% "bottle to bottle")	2030	
		ITOEN	PET bottles	Recycled materials (including plant-derived materials such as bio-based plastics)	100%	2030	ITO EN Group Medium- to Long-Term Environmental Goals https://www.itoen-global.com/management/csr_csv/environment.php
			Oi Ocha tea bags	Plant-based biodegradable plastics (PLA)	Use in tea bag filters	2021 *For the tea bag of Oi Ocha Green Tea, one made with PLA has been on sale from April 13, 2020.	ITO EN "Presentation Material for the nine-month period ended January 31, 2020” https://www.itoen-global.com/ir/pdf/2020/pr/jan20.pdf
		Kirin Holdings Company	Beverage containers and packaging	Bio-PET, bio-PE etc.	Sustainable containers and packaging (biomass and recycled materials etc.) 100% *“Biomass” includes bio-based plastics.	2050	Kirin Group "Kirin Group Environmental Vision 2050" https://www.kirinholdings.co.jp/english/news/2020/0210_01.html Kirin Group "Kirin Group Environmental Report 2020" (p.10 and 46) https://www.kirinholdings.co.jp/english/csv/report/env/pdf/environmental2020e.pdf
			PET bottles	Bio-PET (use of non-edible raw materials)	Study will be conducted for the introduction.	—	Kirin Group "Kirin Group Plastic Policy” https://www.kirinholdings.co.jp/english/news/2019/0207_01.html
		KYUSEI BEVERAGE (Sales subsidiary: STAR NINE)	Soft drink products	Plant-based environmentally friendly materials (including bio-based plastics), recycled materials, etc.	Continue examinations and investigations for the use.	—	KYUSEI website https://www.kyusei.co.jp/

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Manufacturing	Beverage	Sapporo Holdings	Containers and packaging	Renewable resources *Including bio-based plastics	Increase the use of renewable resources, and reduce dependency on exhaustible resources *Renewable recources include bio-based plastics.	—	Sapporo Group “Containers and Packaging Vision” https://www.sapporoholdings.jp/en/csr/earth/3r/container/
				Containers and packaging suitable for a recycling-oriented society (in addition to the continued use of cans, glass bottles, and barrels that can be recycled and reused, the use of renewable PET resins, biodegradable plastics, and biomass materials, as well as the use of FSC-certified paper) *Biomass materials include bio-based plastics. *The materials will be selected as appropriate according to the conditions of use and disposal.	100% (long-term vision)	2050	Sapporo Group “Containers and Packaging Vision” https://www.sapporoholdings.jp/en/csr/earth/3r/container/
		Suntory Holdings	All the PET bottles used globally	Recycled or plant-derived materials (e.g. bio-based plastics)	100%	2030	Suntory Group “Suntory Group Plastic Policy” https://www.suntory.com/csr/activity/environment/reduce/plastic/
	Food	Calbee	Food packaging	Plant-derived raw materials such as bio-PE and bio-PET, and recycled raw materials *Consideration will be given in the future to the adoption of bio-PP etc., which are not currently commercially available.	Reduce plastics made from oil that are used in our packaging by 50% (from the 2018 level)	2030	Calbee “Targets to promote plastic resources circulation” https://www.calbee.co.jp/newsrelease/200910.php
		J-Oil Mills	Containers and packaging *We signi¬ficantly reduced the volume of plastic employed for our "AJINOMOTO Karaage no hi no abura (The special oil for fried chicken)", launched in FY 2018, by using pouches that employ vapor deposition barrier technology and increase storage life. In addition, we are employing bioplastics derived from sugarcane (biomass), for which we have received an Eco Mark.	Bio-based plastics, recycled plastics, easily recyclable materials, etc.	Actively strive to realize environmentally conscious product development	—	J-Oil Mills, INC. “Guidelines for Containers and Packaging” (p.46) https://pdf.irpocket.com/C2613/bbZB/kTTB/xXBa.pdf

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Manufacturing	Food	Kagome	Straws for paper beverage packs	recyclable materials (plant-derived materials such as bio-based plastics and paper materials)	100%	2030	Kagome “Integrated Report 2020” https://www.kagome.co.jp/library/company/ir/data/integratedreport/2020/pdf/report_2.pdf
		Meiji Holdings	Plastic packaging, straws attached to products, etc.	Bio-based plastics and recycled plastics	Work on increasing the use *Specific examples - Use of bio-based plastic in straws attached to beverage products (approximately 600 million straws per year). - Use of bio-based plastic in the plastic cups of Meiji's SAVAS at a rate of 10%.	Bio-based plastics will be blended sequentially from the second half of FY 2020.	Meiji Group "Meiji Group Plastic Policy" https://www.meiji.com/global/sustainability/policies/pdf/meiji_group_plastic_policy.pdf
		MORINAGA MILK INDUSTRY	Plastic containers and packaging (cups, flexible packaging)	Bio-based plastics, recycled plastics	Expand the use *Currently under consideration but not finalized	—	Morinaga Milk “Sustainability Data Book 2020” https://www.morinagamilk.co.jp/english/csr/pdf/2020/morinaga2020e.pdf
		Nissin Foods Holdings	Cup Noodle cup	Bio-based plastics etc.	Replace the “cup” of all Cup Noodles in Japan with Biomass Eco Cup (e.g. paper, bio-based plastics, etc.).	Within FY 2021	Nissin Foods press release: "The Cup Noodles achieved industry's first biomass level of 80% or more with Biomass ECO Cup - Switchover to Biomass ECO Cups to begin in 2019, and complete switchover in 2021" (June 11, 2019) https://www.nissin.com/jp/news/7874
		Pasco Shikishima Corporation	Plastic containers and packaging	Plant-derived raw materials (e.g. bio-based plastics) and environmentally friendly raw materials	Use in products in order of possibility * The “& Green” series has adopted bio-based plastics as packaging material.	—	Pasco Shikishima Corporation website: https://www.pasconet.co.jp/english/
		Yakult Honsha	Plastic containers and packaging	Easily-recyclable materials (biomass materials including bio-based plastics, recycled materials, etc.)	Begin conversion	2025	Yakult Group “Yakult CSR Report 2020" https://www.yakult.co.jp/english/pdf/csr2020_en.pdf
					Convert as much as possible	2030	
	Toiletry and cosmetic products	ALBION	Containers of products including "ALBION" brand	Environmentally friendly materials such as bio-based plastics and recycled materials	Containers of all new products in the future will be environmentally friendly.	From 2021	ALBION company website: https://www.albion-cosmetics.com/global/
		Kao Corporation	Packaging	Bio-based plastics	Consumption of bio-based plastics: x3	2025	Kao Corporation “Kao Sustainability Data Book 2020” https://www.kao.com/content/dam/sites/kao/www-kao-com/global/en/sustainability/pdf/klp-pr-2020-e-all.pdf

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Manufacturing	Toiletry and cosmetic products	KOSÉ Corporation	Plastic packaging * Specific examples Bio-based plastics have already been introduced to skin-care products (the SEKKISEI CLEAR WELLNESS series).	Bio-based plastics and recycled plastics	50%	2030	KOSÉ Corporation “KOSÉ Sustainability Plan” https://www.kose.co.jp/company/en/content/uploads/2021/04/2021kose_sustainability_plan_EN.pdf
		LION Corporation	Plastic products and packaging in general	Bio-PE, bio-PET, plant-derived raw materials	Double the amount to use (compared to 2017 based on absolute amount)	2030	LION Corporation "Eco Challenge 2050 Long-Term Environmental Objectives" https://www.lion.co.jp/en/csr/env/ecovision2020/
		Shiseido Company	Plastics packaging	Sustainable packaging (bio-based materials including bio-based plastics, post consumer recycled (PCR) materials, etc.)	Consider promotion of the use *The company’s own 5Rs policy for packaging has been established, and some of the virgin plastic materials are being switched as a measure of “Replace”.	2025	Shiseido Company "Sustainability Report 2019" https://corp.shiseido.com/en/sustainability/pdf/2019.pdf
	Daily goods	Unicharm Corporation	Plastic containers and packaging	Environmentally friendly materials (using plant-derived renewable organic resources, such as bio-based plastics)	50%	2030	Unicharm Group "Eco Plan 2030" http://www.unicharm.co.jp/english/csr/environment/management/index.html Unicharm Group’s mid-to-long term environmental, social, and corporate governance (ESG) goals, “Kyo-sei Life Vision 2030” http://www.unicharm.co.jp/english/csr/kyoseilifevision/index.html
	Pharmaceutical products	Otsuka Holdings	Entire line of consumer products *PET bottles comprise the majority of plastic containers and packaging used for consumer products by the Otsuka Group companies.	Plant-based materials (including bio-based plastics), recycled materials, etc.	Promotion of the use	2050	Otsuka Group “Otsuka Group Plastic Policy” https://www.otsuka.com/en/csr/environment/plastic.html
			PET bottles (global)	Plant-based materials (including bio-based plastics) and recycled materials	50% or more	2030	
	Plastic products	Asakura	Packaging materials	Bio-PE, recycled PET, etc.	100 tons/year	2025	Asakura company website: http://www.asakura-inc.co.jp/
		CP Chemical	The CP Bio series (Plastic food containers made of bio-based plastics)	Bio-PE (+ PS + PP), bio-A-PET	Expand to more than 500 items	2023	CP Chemical Incorporated website: https://www.cpkasei.co.jp/
		J-Film Corporation	Eco-Kind Film (Inflation-molded polyethylene film)	Bio-PE	Continue to expand sales	—	J-Film Corporation website: http://www.jfilm.co.jp/en/index.html

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Manufacturing	Plastic products	Kawakami Sangyo	bio-puti (bubble wrap)	Bio-PE	Bio-based synthetic polymer content: 50% or more *The content of current "bio-puti" is 15%.	2030	Kawakami Sangyo company website: https://www.putiputi.co.jp/en
			Green Puti (R) (bubble wrap) *Used for agricultural and building material applications where biodegradation is conducted in appropriate situations.	Biodegradable plastics *The goal is to develop products that are biodegradable in both the terrestrial and marine environments.	100%	2030	
		KIRACS	Bio-based marine biodegradable bags (film)	Bio-based marine biodegradable plastics	Development and production of bags (films) that are marine biodegradable and have practical physical properties.	2025	KIRACS company website: Development Commodity Division https://www.kiracs.co.jp/division/development.html
		Marushin Chemical Industry	Packaging materials	Bio-PE, recycled PET, etc.	30% in total	2030	Marushin Chemical Industry company website: https://www.marushinkagaku.co.jp/
		NISSEI CHEMICAL	Foam PE bags for weddings, funerals, and festive occasions; foam sealant film for flexible packaging lamination	Bio-PE	Expand the sales volume	From 2020	NISSEI CHEMICAL company website: http://www.nissei-grp.com/
		RISUPACK	Food container (Bioneut, Ecoha, Neut-Delica, Bio-Delica, Bio-Cup, and Bio-HIPS series)	PLA, bio-PET, bio-PE, and bio-HIPS *As for PLA containers, the company aims to establish a carbon resource utilization flow that achieves an environmental economy (utilizing biodegradability: composting and anaerobic digestion).	Expand bio-based products (1,800 items in March 2019 → 2,400 items in March 2021)	March 2021	RISUPACK company website: http://www.risupack.co.jp
			Food container (Bioneut series)	PLA	Establish a carbon resource utilization flow that achieves an environmental economy (utilizing biodegradability: composting and anaerobic digestion).	2030	
		Seikou	Green OPP, Anti-fogging film for agricultural product packages	PP + bio-PE	30% of sales volume	2030	Seikou company website: http://www.seikou-web.com

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Manufacturing	Plastic products	SUMIKASEKISUI FILM	Mulch films "Nodoka®" *Mulch film is an essential polyethylene film that is used in many agricultural applications to improve crop quality and production yield. Normally, mulch films need to be collected after use, but because Nodoka® is biodegradable, it can be plowed into the field after use and degraded in the soil, saving labor for removal and making it a product with low environmental	Biodegradable plastics	Replace 1,000 tons/year of mulch film sales with Nodoka®.	2030	SUMIKASEKISUI FILM company website: "Nodoka®" https://www.ss-film.co.jp/products/agriculture/nou_poly-multi/nodoka/
			Bio-based shrink film for product packaging *Bio-based garbage bags containing 30% bio-based plastics are also being sold to some municipalities.	Bio-based plastics	Bio-based plastic component: 5% or more	FY 2021	SUMIKASEKISUI FILM company website: https://www.ss-film.co.jp/
		TOMEI CHEMICAL INDUSTRIAL	Food packaging, non-food packaging	Bio-PET, bio-PE	PET: Convert 20% of 1,256 tons/year to biomass PE: Convert 3% of 390 tons/year to biomass	2022	TOMEI CHEMICAL INDUSTRIAL company website: http://www.tomei-c.co.jp/
		Yamato-Esulon	Food containers and packaging, daily goods, etc.	Bio-PE, Bio-PET, etc.	1,000 tons/year (brend bio-based plastics to fossil based plastics)	2030 *Bio-based plastics products has already been commercialized, and the company will continue product development.	Yamato-Esulon company website: http://www.yamato-esulon.co.jp/english/index.html
		Yoshikawakuni Plastics Industries	Daily goods (two types of *like-it* Round Basket and two types of *like-it* Town Basket, etc.)	Bio-PE	Two types of *like-it* Round Basket and two types of *like-it* Town Basket: bio-based plastic content 90% - Other products: bio-based plastic content 30%	2025	Yoshikawakuni Plastics Industries Ltd. company website: https://www.like-it.jp/
		VASU Japan	Toothbrushes, food trays, shopping bags, etc.	Bio-based plastics	Use a total of 500 tons/year in Japanese market	2021	VASU Japan company website: https://www.vasu.tokyo
			Gardening supplies, etc.	Biodegradable plastics			
	Paper and pulp	Tokan Kogyo	Food containers	Bio-PE and bio-PET	Increasing the ratio of recycled and plant-based plastics by 30% (targets for the introduction of bio-based plastics to be set in the future)	2030	Toyo Seikan Group "Eco Action Plan 2030" https://www.tskg-hd.com/en/csr/environment/global/global01/ Tokan Kogyo company website: "CSR" https://www.tokan.co.jp/english/csr/

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Manufacturing	Metal products	Toyo Seikan	PET bottles	Environmentally friendly materials (bio-based and recycled plastics)	Increasing the ratio by 30% *Mainly recycled materials will continue to be used for preforms and bottles as environmentally friendly materials. *Bio-based plastics have been used in preforms and bottles (as of 2020).	2030	Toyo Seikan Group “Eco Action Plan 2030” https://www.tskg-hd.com/en/csr/environment/global/global01/ Toyo Seikan company website: “Environmental site” https://www.toyo-seikan.co.jp/eco/english/
		Toyo Seikan Group Holdings	Plastic containers and packaging	Bio-based plastics and recycled plastics	Increasing the ratio by 30%	2030	Toyo Seikan Group “Eco Action Plan 2030” https://www.tskg-hd.com/en/csr/environment/global/global01/
				Renewable materials (including bio-based plastics) and recycled materials	Reduce the use of fossil resources to the maximum extent and replace them with recycled or renewable materials	2050	Toyo Seikan Group "Long-term Goals toward 2050" https://www.tskg-hd.com/en/csr/environment/global/global01/
	Printing	Dai Nippon Printing	Containers and packaging etc.	Bio-PE and bio-PET	FY 2020 CO_2 reduction: 5,000 tons or more (As a result of calculating the CO_2 reduction effect of the plant-based packaging material Biomatech developed by DNP, the CO_2 reduction was equivalent to approximately 2,500 tons in FY 2018 and approximately 3,000 tons in FY 2019 compared to the use of fossil based packaging materials.)	2050	Dai Nippon Printing company website: https://www.dnp.co.jp/eng/
	Textile	DAIKA Industries	Bio Turf, artificial turf for sports use, and Bio Eco Sanknet, bag body for foot protection method	Bio-PE (artificial turf for sports use), bio-PET (bag body for foot protection method)	Use of bio-based yarn (30% bio content): 1,000 tons/year, CO_2 reduction target: 587 tons/year	2025	DAIKA Industries Co.,Ltd website: http://www.daika.co.jp/
		DODO	The brim core and the attached resin parts of hats and caps	Bio-based plastics, recycled plastics, etc.	Switch 50% of the brim cores of one million hats and caps annually to bio-based plastics (content: 30%) + recycled plastics (content: 70%).	2025	DODO company website: https://www.japan-hatmaterial.com/
		Green cop	Forest protection products (bark stripping prevention net, seedling cover)	Bio-based plastics (bio-PE) or biodegradable plastics	100% (In the case of bio-based plastics, the target is to make the bio-based synthetic polymer content 90% or more.)	2030	Green cop company website: “Forest Protection Products” https://green-cop.com/?page_id=444
		GUNZE	Food packaging film	bio-based materials (bio-based plastics etc.)	Help reduce the use of petrochemical raw materials by developing products using bio-based materials	—	GUNZE “Basic Policy for Plastic Resource Circulation” https://www.gunze.co.jp/english/news/2020/20200219.html

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Manufacturing	Chemical industry	Sumitomo Bakelite	Pharmaceutical packaging (PTP packaging) *Multilayer film for food packaging containing approximately 20% bio-PE is already launched in 2020.	Bio-PE	Bio-based plastic blending ratio 50%	Around 2022	Sumitomo Bakelite Company website: https://www.sumibe.co.jp/english/
Food and beverage service industry	Restaurant	MOS Food SERVICES	Takeout related supplies to be used at MOS BURGER restaurants	Bio-based plastics	70% adoption rate of environmentally friendly materials including bio-based plastics	2030	MOS FOOD SERVICES company website: https://www.mos.co.jp/global/
	Food and beverage delivery service	Watami	Containers for frozen and chilled prepared meals used in Watami's Takushoku (eat at home) *10% of bio-based synthetic polymer content since October 2019.	Bio-PE	Bio-based synthetic polymer content: 10%	2024	Watami Monthly "Takushoku Life" January 2020 issue "Reasons that We're Working to Change Containers." https://s3-ap-northeast-1.amazonaws.com/media.watami-takushoku.co.jp/pdf/info/tl191223.pdf
Wholesale and retail	Retail	AEON	Private brand products	Environmentally friendly and socially conscious materials (including plant-derived materials such as bio-based plastics)	Introduction to all the private brand products	2030	AEON company website: https://www.aeon.info/en/
		FamilyMart	Original product packaging, etc.	Environmentally friendly materials (bio-based plastics made from plants, recycled PET, etc.)	60%	2030	FamilyMart "FamilyMart Environmental Vision 2050" https://www.family.co.jp/english/sustainability/ecovision.html
					100%	2050	
			Private brand ready-made meal container	Bio-PE, bio-PET	1. Expansion to a wide range of products 2. Improvement of bio-based plastic blending ratio	—	FamilyMart company website: https://www.family.co.jp/english.html
				Bio-PP	Use of Japan's first container that uses bio-PP	From the spring of 2021	
		Lawson	Containers and packaging for Lawson's original products	Eco-friendly materials (including bio-based plastics)	50%	2030	Lawson company website: "Engaging with the SDGs" https://www.lawson.jp/en/csr/environmental_management/
					100%	2050	
		Seven & i Holdings	Shopping bags used at stores of Seven & i Holdings Group (Ito-Yokado, York-Benimaru, York)	Bio-PE	Biobased content: 30%	—	Seven & i Holdings company website: "Introduction of Environmentally Friendly Packaging" https://www.7andi.com/en/csr/theme/theme3/invention.html
			Packaging for 7-Eleven original rice ball	Bio-based plastics	—	—	
			Cups for 7-Eleven original salads	Bio-PET	—	—	
			Containers used in original products	Environmentally friendly materials (e.g., biomass, biodegradable and recycled materials and paper) *The materials will be selected as appropriate according to the conditions of use and disposal.	50%	2030	Seven & i Group's Environmental Declaration "GREEN CHALLENGE 2050" https://www.7andi.com/en/csr/policy/environment_03.html
					100%	2050	

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Wholesale and retail	Wholesale	ZEN-NOH (National Federation of Agricultural Cooperative Associations)	Mulch films	Biodegradable plastics	15% of mulch films	2030	ZEN-NOH website: https://www.zennoh.or.jp/english/

2. Targets for Manufacturing and Sales of Bioplastic Materials

Industry		Company	Material to be manufactured or sold	Target level	Target period	Available products and applications	Reference URL
Manufacturing	Chemical industry	Bell Polyester Products	Bio-based copolymerized PET *The resin is the partially bio-based copolymerized-PET which emphasized in transparency, design, and chemical resistance through modification, and is not the bio-PET currently widely used.	300 tons/year or more *Aim for 1,000 tons/year or more in the long term.	2021 *Already launched in the market, and works towards customer acquisition is now underway.	Cosmetic product containers, food packaging, etc.	Bell Polyester Products company website: https://www.bellpet.co.jp/english/index.html
		Daicel	Cellulose acetate and CAFBLO™ (highly biodegradable cellulose acetate)	10,000 to 20,000 tons/year *Total of cellulose acetate, CAFBLO™ (highly biodegradable cellulose acetate) and BELLOCEA® (spherical cellulose acetate particles)	2025	Food and beverage containers, agricultural and fishing supplies, stationery, toys, textiles, packaging materials, etc.	Daicel company website: "Cellulose Acetate" https://www.daicel.com/cell_ac/en/
			BELLOCEA® (spherical cellulose acetate particles)			Micro particles for cosmetic products	
		Daicel-Evonik	Bio-PA Polyamide 610 VESTAMID® Terra HS, DAIAMID® Terra HS Polyamide 1010 VESTAMID® Terra DS, DAIAMID® Terra DS Polyamide 1012 VESTAMID® Terra DD, DAIAMID Terra DD	Increase the sales ratio of bio-based plastics	As needed	Food packaging, automobiles, sporting goods, etc.	Daicel-Evonik company website: https://www.daicel-evonik.com/english
		ITOH OIL CHEMICALS	Castor oil-derived material (intermediate material for bio-PU foam, etc.) *Castor oil-derived material is also used for the following applications: paints, inks, adhesives, sealants, cutting oils, cosmetics	Adoption in areas that have traditionally used fossil based materiasls	—	Applications of bio-PU foam: Bedding, furniture, cushioning materials, etc.	ITOH OIL CHEMICALS company website: https://www.itoh-oilchem.co.jp/en/
		KANEKA Corporation	Kaneka biodegradable polymer PHBH	Production capacity: 100,000 to 200,000 tons/year	2030	Plastic packaging and products (food containers and packaging, cutlery, garbage bags)	Kaneka Corporation website: “Biodegradable Polymer” https://www.kaneka.co.jp/en/solutions/phbh/
		Kuraray	PLANTIC™ (gas barrier material made mainly from modified starch)	200 tons/year in the first year (weight of the PLANTIC™ layer in the multilayer sheet) *Sold as a multilayer gas barrier sheet consisting of PET/PLANTIC™/PET	2021	Food trays for gas displacement packaging	Kuraray company website “PLANTIC” https://www.kuraray.com/products/plantic
			Hydrogenated styrenic thermoplastic elastomers using bio-based raw materials	200 tons/year	2026	Consumer goods, shoes, etc. *Can be used as a rubber modifier and adhesive agent	Kuraray company website: "SEPTON BIO-series" https://www.elastomer.kuraray.com/septon/special-product-lines/septon-bio-series/

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Manufacturing	Chemical industry	Mitsubishi Chemical Corporation	GOHSENOL™, GOHSENX™, Nichigo G-Polymer™ *Biodegradable plastics (PVA)	Production capacity: approximately 10,000 tons/year	2030	Films, fibers, PVF, PVB, water-soluble molded products, cores and outer cores * Other applications are as follows Adhesives and binders: Adhesives, construction and civil engineering, inorganic binders, synthetic leather, seedling culture soil, agricultural chemical granules Paper processing: Surface coating, special paper Suspension agent: Dispersant for suspension polymerization of vinyl chloride Emulsifiers: Emulsifiers for emulsion polymerization of vinyl acetate and acrylic emulsions	Mitsubishi Chemicals company website: "GOHSENOL™, GOHSENX™" https://www.gohsenol.com/index_e.shtml Mitsubishi Chemicals company website: Nichigo G-Polymer™ https://www.g-polymer.com/eng/
			DURABIO™ *Biomass-derived engineering plastics	Production capacity: several tens of thousands of tons per year	2030	Housing for electronic equipment, interior and exterior materials for automobiles, cosmetic product containers, soundproof walls, construction materials, optical and energy-related materials, alternative materials for high-performance glass	Mitsubishi Chemicals company website "DURABIO™" https://www.m-chemical.co.jp/en/products/departments/mcc/ams/tech/1209977_7578.html
			BioPBS™, FORZEAS™ (FORZEAS™ is a biodegradable resin compound based on BioPBS ™) *Biomass-derived and biodegradable plastics	Production capacity: several hundred thousand tons per year	2030	Tableware, containers, food trays, cutlery, paper cups, straws, coffee capsules, flower pots, vases, lids for paper cups, packing materials, shopping bags, plastic shopping bags, composting bags, various packaging materials, zippers for packaging, fibers, mulch films	Mitsubishi Chemicals company website BioPBS™ https://www.m-chemical.co.jp/en/products/departments/mcc/sustainable/product/1201025_7964.html
			BENEBiOL™ Bio-polycarbonate diol (intermediate raw material for PU resin, acrylic resin, polyester resin, etc.) *Already launched in the market	Production capacity: 10,000 tons/year	2030	- PU resin: Artificial leather, synthetic leather, water-borne urethane, polyurethane elastomer * Other applications are as follows Paints and coatings, adhesives and sealants - Acrylic resins: Urethane acrylate resin, diacrylate resin - Polyester resins: Polyester elastomer (TPEE)	Mitsubishi Chemicals company website "BENEBiOL™ (PCD)" https://www.m-chemical.co.jp/en/products/departments/mcc/basicmat/product/1201000_9362.html
			Bio-polytetramethylene ether glycol (bio-PTMG) (bio-PU, intermediate raw material for polyester elastomer)	Launched in the market	Around FY2025	- PU: Spandex, thermoplastic/curable elastomer, artificial/synthetic leather * Other applications are as follows Paints and coatings, adhesives, etc. - Polyester elastomer: tubes, hoses, automotive parts, electrical parts, pen grips, etc.	Mitsubishi Chemicals company website "Polytetramethylene ether glycol/PTMG" https://www.m-chemical.co.jp/en/products/departments/mcc/c4/product/1201008_7922.html

Industry		Company	Material to be manufactured or sold	Target level	Target period	Available products and applications	Reference URL
Manufacturing	Chemical industry	Mitsui Chemicals	Bio-PP	Production: 100,000 tons/year	2030	Polyolefin-based products and general applications	Mitsui Chemicals Mitsui Chemicals Report 2019 https://jp.mitsuichemicals.com/en/ir/library/ar/pdf/ar19_all_en.pdf
			STABiO™ bio-based polyisocyanate (Raw material of Bio-PU)	Sales of 1,000 tons/year	2025	Applications of bio-PU: Coatings for automobiles, architectural coatings, adhesives, molding materials, etc.	Mitsui Chemicals "STABiO™," https://jp.mitsuichemicals.com/en/service/packaging/coatings/stabio/index.htm
		Sumitomo Bakelite	Lignin-modified phenolic resins	Replace 5% of phenolic resin products in the future	Mass production technology has been established, and if the sample becomes accepted, mass production will begin (commercialization becomes possible at several tons per month)	Phenolic resin products, automotive applications, industrial materials, etc.	Sumitomo Bakelite Company Press Release "Developed a plant-derived phenolic resins (lignin modified phenolic resins)" (September 17, 2020) https://www.sumibe.co.jp/english/topics/2020/hpp/0917_01/index.html
		Total Corbion PLA b.v.	PLA	Production capacity: 175,000 tons/year *Current production capacity: 75,000 tons/year (currently supplying globally) *Preparing a new plant in France with a capacity of 100,000 tons/year.	Within 2024	Packaging, clothing, cards, films, bags, stationery, etc. *Respond to both biomass and biodegradation perspectives	Total Corbion PLA website: https://www.total-corbion.com Total Corbion PLA Press release "Total Corbion PLA announces the first world-scale PLA plant in Europe" (September 24, 2020) https://www.total-corbion.com/news/total-corbion-pla-announces-the-first-world-scale-pla-plant-in-europe/
	Fiber	TORAY INDUSTRIES	100% bio-based polyester fiber	10,000 tons/year	Aim to start mass production in the 2020s	Automobile interior materials, sportswear, uniforms, etc.	TORAY company website "Moral fiber: sugar cane replaces petroleum to make eco-friendly polyester fabrics" https://www.toray.com/global/sustainability/articles/vol02.html
		TOYOBO	Bio-PET, bio-PE, bio-PP, bio-PA, PEF, etc.	Plan to replace all packaging materials with renewable materials (bio-based plastics, recycled materials, etc.) *Current sales volume is about 1,000 tons per year.	2050	Packaging (food, general)	TOYOBO company website: "Packaging Headquarters" https://www.toyobo-global.com/seihin/film/package/list/productslist.html
		Unitika	Bio-based plastics (PLA, etc.) fibers, nonwoven fabrics, resins for molding	Double the production volume	2030	Fibers (applications: tea bags, towels for body washing, etc.), nonwoven fabrics (applications: civil engineering materials, etc.), resins for molding (applications: straws, cutlery, etc.), and others	KEIDANREN (Japan Business Federation) "Good Practices of Plastic-Related Initiatives Contributing to the SDGs" https://www.keidanren.or.jp/policy/2018/099_jirei.pdf
	Paper and pulp	Oji Holdings Corporation	Bio-PE (use of inedible raw materials), PLA (use of inedible raw materials)	Bio-PE (use of inedible raw materials): 30,000 to 60,000 tons/year PLA (use of inedible raw materials): 2,000 tons/year	Aim for commercialization in 2025-2030.	Replacement of existing bio-based plastics (derived from edible biomass)	Oji Holdings company website: https://www.ojiholdings.co.jp/english/

Wholesale and retail	Wholesale	Toyota Tsusho Corporation	Bio-PE (import)	Increase the amount to be imported to Japan *Discussions are underway with manufacturers to increase volume and production capacity for Japan.	FY2021	Food packaging, shopping bags (plastic bags), garbage bags, daily necessities, toys, etc.	Toyota Tsusho Corporation company website: https://www.toyota-tsusho.com/english/

*This collection contains targets for the introduction of bioplastics by companies in accordance with the principles of the Roadmap for Bioplastics Introduction .

Terms:	Bio-PA	Abbreviation for polyamide that uses renewable organic resources, such as plants as raw materials
	Bio-PE	Abbreviation for polyethylene that uses renewable organic resources, such as plants as raw materials.
	Bio-PET	Abbreviation for polyethylene terephthalate that uses renewable organic resources, such as plants as raw materials. Some companies describe this as plant-derived PET.
	Bio-PP	Abbreviation for polypropylene that uses renewable organic resources, such as plants as raw materials.
	Bio-PU	Abbreviation for polyurethane that uses renewable organic resources, such as plants as raw materials.
	PA	Abbreviation for polyamide (also known as nylon)
	PBS	Abbreviation for polybutylene succinate
	PE	Abbreviation for polyethylene
	PEF	Abbreviation for polyethylene furanoate
	PET	Abbreviation for polyethylene terephthalate
	PHBH	Abbreviation for poly(3-hydroxybutyrate/co-3-hydroxyhexanoate)
	PLA	Abbreviation for polylactic acid
	PP	Abbreviation for polypropylene
	PS	Abbreviation for polystyrene
	PU	Abbreviation for polyurethane
	PVA	Abbreviation for polyvinyl alcohol