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Navigating the EU BPA Ban:

Essential insights on plastic use in industrial food contact applications

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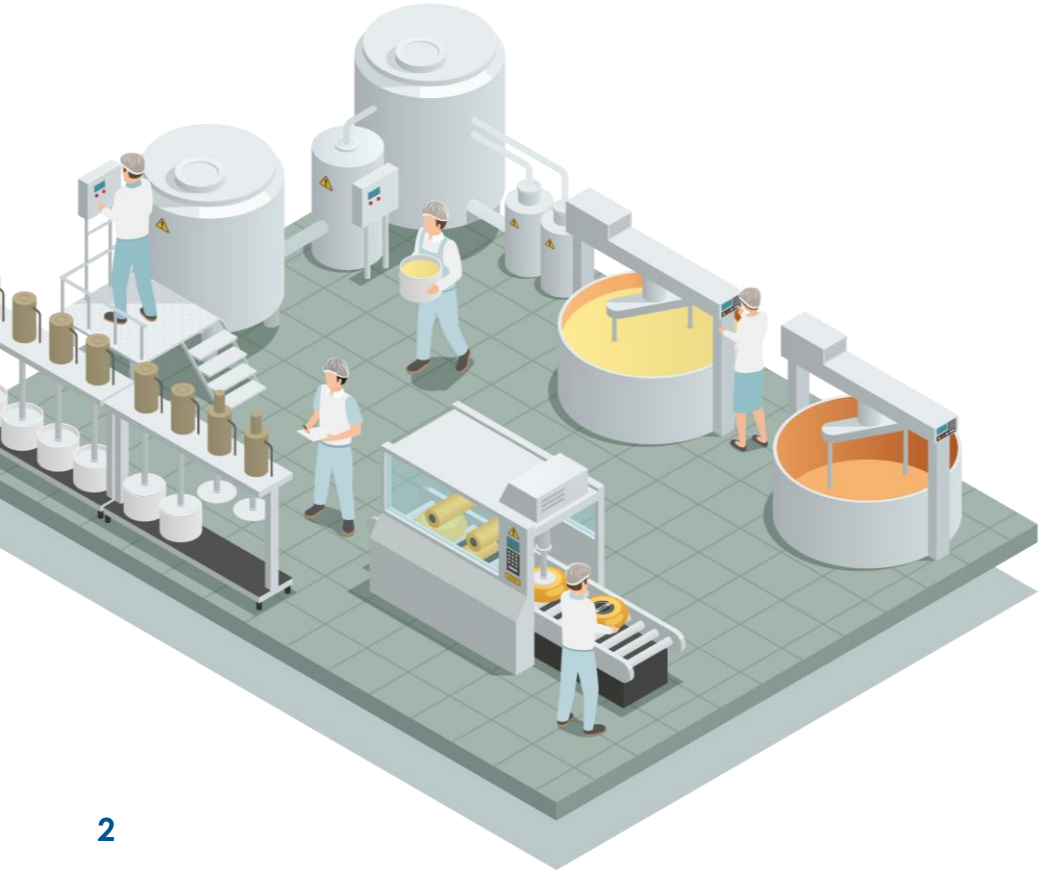
What you will learn.



Further understanding of the BPA ban in food contact applications

Expand on the European Commission Regulation (EU) 2024/3190, highlighting further definitions and transition periods

What food contact components may be affected by the ban

Understand where plastic components are found in food processing equipment, which components are in scope and provide examples

Introduce Eastman Tritan™ copolyester as the ideal solution for food contact applications

Identify the key performance requirements needed for food processing equipment and how Tritan™ from Eastman can be the perfect replacement material

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What does the BPA ban entail?

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Commission regulation (EU) 2024/3190
of 19 December 2024

Effective January 2025, the European Commission enacted Commission Regulation (EU) 2024/3190, which bans the use of Bisphenol A (BPA) in all materials that come into contact with food - including food production equipment.

This prohibition covers BPA in the manufacturing of plastics, coatings, inks, adhesives, silicones and rubbers used in contact with food, **extending to protective components such as food guards and covers.**

*"Today's ban, which is based on solid scientific advice, **will protect our consumers against harmful chemicals** where they can come into contact with their food and drink."*

Oliver Várhelyi, Commissioner for Health & Animal Welfare, 19 December 2024

**https://food.ec.europa.eu/food-safety-news-0/commission-adopts-ban-bisphenol-food-contact-materials-2024-12-19_en*

What dates are important to note

Effective today

DEC 2024
The BPA ban
entered into force

JULY 2026
End of 18-month transition period
for single-use and repeat-use final food contact materials, unless derogated

Standard transition period:

- Regulation mandates a standard transition period until **July 2026**.
- Some uses may require **extended transition time**.

Extended transition period for:

- Single-use materials for seasonal foods (fruit & veg, fishery products) to avoid wasting large stocks.
- BPA coatings on the external side of metal cans (limited exposure; alternatives still in development).
- **Repeated-use materials in professional food production equipment** — difficult to replace due to design, function, or interaction with other parts.
- Examples: confectionery molds, seals, pumps, flanges, gauges, sight glasses (non-exhaustive).

JAN 2028
End of 36-month transition
period for derogated users

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How has the industry responded

- **Scope:** Limit the ban to articles with intentional use of BPA
- **Transition period:** Companies need sufficient time to be able to phase out BPA formulations
- **Qualification & development process:** Need to evaluate replacement materials that are suitable, high quality and safe. If these do not exist, need to file an exception
- **Application Variability:** Some articles may take longer to transition
- **Waste Reduction:** Avoid removing existing materials that are in good working order

Key considerations for BPA transition period

Key question

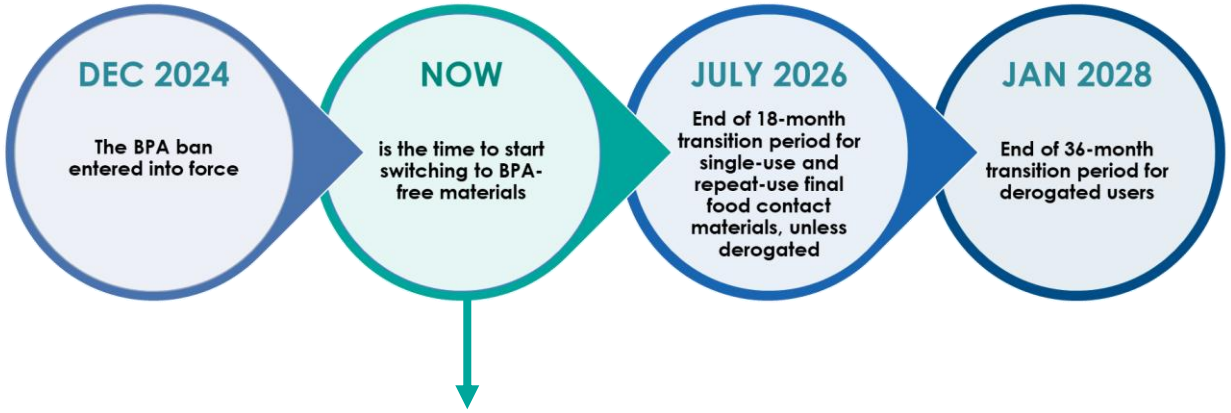
If a replacement project starts today, is it reasonably possible to replace the parts made with BPA by July 2026?

If YES

Start the project immediately!

If NO

Start project & justify why the application falls under a derogation



NOW IS THE TIME TO START SWITCHING

The transition dates are **FINAL deadlines** to remove BPA from your products

Do not wait until the last moment to comply!

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What is food contact?

Materials and articles, including active and intelligent food contact materials and articles, which in their finished state:

Intended to be brought into contact with food

Examples: food packaging, kitchenware, tableware

(a) are **intended to be brought into contact** with food;

Already in contact with food

Examples: containers, bottles, conveyor belts

(b) are **already in contact with food** and were intended for that purpose;

Reasonably expected to be brought into contact with food

Examples: paper towels, protective guards, kitchen towels

(c) can **reasonably be expected to be brought into contact with food** or to transfer their constituents to food under normal or foreseeable conditions of use.

Compliance, controls and monitoring

Compliance is verified through a **Declaration of Compliance (DoC)**.

Annual audits carried out internally and through competent authorities require the necessary supporting documentation for food contact components

Monitoring BPA levels should be conducted by analytical testing, proportionate to the likely frequency and level of contamination

Follow up to relevant findings. Investigations into the possible sources and proposed remedial action, where necessary

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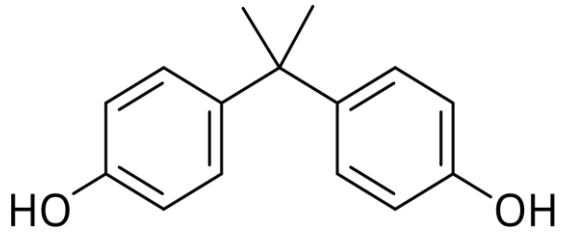
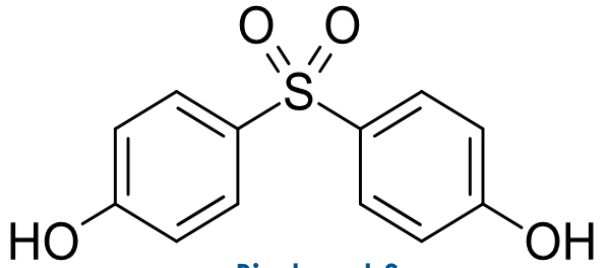
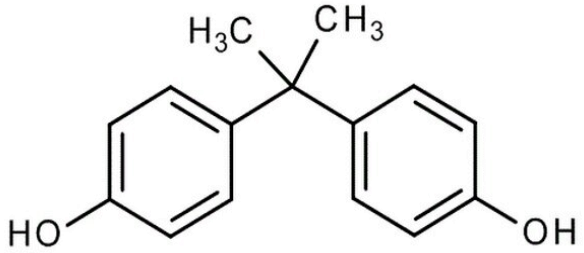
What about other hazardous bisphenols



Bisphenol-A



Bisphenol-S



2,2-bis(4'-hydroxyphenyl)-4-methylpentane

Should you replace BPA with another hazardous substance?

- As well as bisphenol-A, bisphenol-S and 2,2-bis(4'-hydroxyphenyl)-4-methylpentane are classified in accordance with CLP Regulation as Repr. 1B
- Since Sep 1: Bisphenol-AF (BPAF) and Tetrabromobisphenol-A (TBBPA) are now classified respectively as Repr. 1B and Carc. 1B, and are in scope of Regulation 2024/3190
- Bisphenol F: ECHA opinion on classification as Carc. 1B

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What food contact components are affected by the BPA ban?

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Uses of BPA in food contact materials

Opaque plastic components in food production equipment

Conveyor belts

Guards & scraper blades

Seals, gaskets & bearings

These materials ARE NOT made from bisphenol-A and are *not affected by the BPA ban*

Clear plastic components in food production equipment

Confectionary molds

Protective guards & sight glasses

Food covers

These are generally made from:

- Polycarbonate
- PETG
- Acrylic (PMMA)

POLYCARBONATE is made from bisphenol-A, so some of these components are affected by the BPA ban

How do I know which components are in scope?

Do your clear plastic components currently require food contact compliance?

If yes, it means these components must meet food contact compliance standards going forward and **will need to be replaced** to comply with those requirements.

Understanding the risk of potential contact to food

How likely is it that food will come into contact with the component?

Remember the key principle:

IF IT CAN, IT WILL

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Example 1

Clear plastic guards are placed on equipment to prevent moisture in the mixing process and protect from sharp knives

Here, there is a potential risk of the food getting in contact (splash back) with the guard

➢ **FOOD CONTACT MATERIAL IS REQUIRED**

Example 2

During the cleaning process, all components of the food equipment need to be cleaning, according to each companies' protocols

Protective guards may be wiped down using the same cloth as components that are in contact with food, under normal conditions.

- **COMPONENT IS REASONABLY EXPECTED TO BE IN CONTACT WITH FOOD**

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What applications are already evaluating alternatives?

Confectionary Molds

Target transition timeline is **January 2028**

Required material needs to be:

- **Tough** to withstand the chocolate demolding step
- **Heat resistant** (up to 100°C)
- **Chemically resistant** to cleaning agents and chocolate ingredients

Validation testing is ongoing, including with **Tritan**.

Bulk Water Bottles

Target transition timeline is **July 2026**

Required material needs to be:

- **Clear** with similar blue tint
- **Durable** crack resistant during transportation
- **Heat and UV stable** during storage

Validation testing is ongoing, including with **Tritan.**

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Eastman Tritan™ Renew:

The safe choice for food production equipment

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Why were transparent plastics used?

History of Polycarbonate

1898

First discovered by Alfred Einhorn, a German scientist at University of Munich. Early Polycarbonate Synthesis, no commercial use

1953

Research resumed when Herman Schnell & Daniel Fox synthesized the first linear & branched polycarbonate, respectively.

1950s

Early adoption in applications like electronic insulators/plugs/industrial components. Plastics became widely available with high public reception

1960s

Processed foods became popular after world wars as globalization was possible, demand for imported foods increased. Breakages with glass drove the food processing industry to polymeric solutions.

1970s

BPA derived polycarbonate arises as best option delivering safety (health risk considered low at the time) and manufacturers obtain food contact approval for PC

2000s

Alternative materials were developed and became commercially successful due to BPA public health concerns

Transparent plastics provide a *balance of properties* for protective guards and covers

	Metal	Transparent Plastic	Glass
Clarity	✗ Limited visuals	✓	✓
Durability	✓	✓	✗
Fabrication	✗	✓	✗
Noise Reduction	✓	✓	✗
Light Weight	✗	✓	✗
Easy to Clean	✓	✓	✓
Chemical Resistance	✓	✓	✓
Food Contact Approval	✓	✓	✓
Substance of Concern Free	✓	✓ BPA free	✓
Detectable	✓	✗ Clear only	✗

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Tritan™ Renew from Eastman

Your new BPA free solution for food production equipment

Trusted globally for more than 15 years, Eastman Tritan copolyester delivers durable, food-safe materials with exceptional performance.

Tritan provides outstanding clarity, chemical resistance and hydrolytic stability, enhanced durability in harsh cleaning environments for reliable and durable, BPA-free food protection equipment.

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Tritan provides a safe alternative to PC and even *exceeds in performance*

	Polycarbonate (PC) with BPA	Acrylic (PMMA)	PETG	Tritan™ Renew from Eastman
Made without materials of concern (no BPA, PFAS, halogens, styrene, phthalates etc.)	✗	✓	✓	✓
Can be used in food contact materials	✗*	✓**	✓	✓
Tough, shatter-resistant material	●	◔	◔	●
Chemically resistant against harsh disinfectants	◑	◔	◕	●
High temperature resistance	●	◑	◑	●
Abrasion resistance	◑	●	◔	◑
Easily fabricated	◑	◑	●	◕

**PC will lose food contact status due to BPA regulation, transition periods already in place*
***Limited grades, free monomers are MOC and already banned in medical/dental applications*

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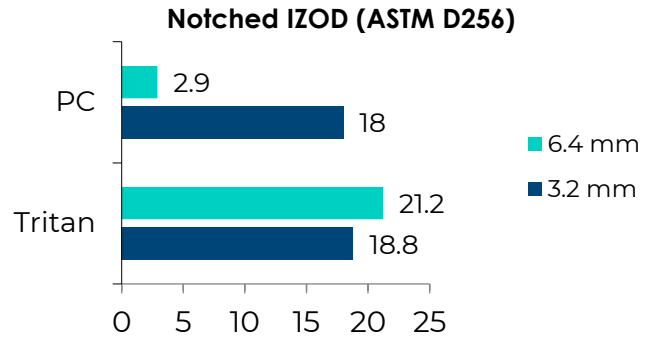
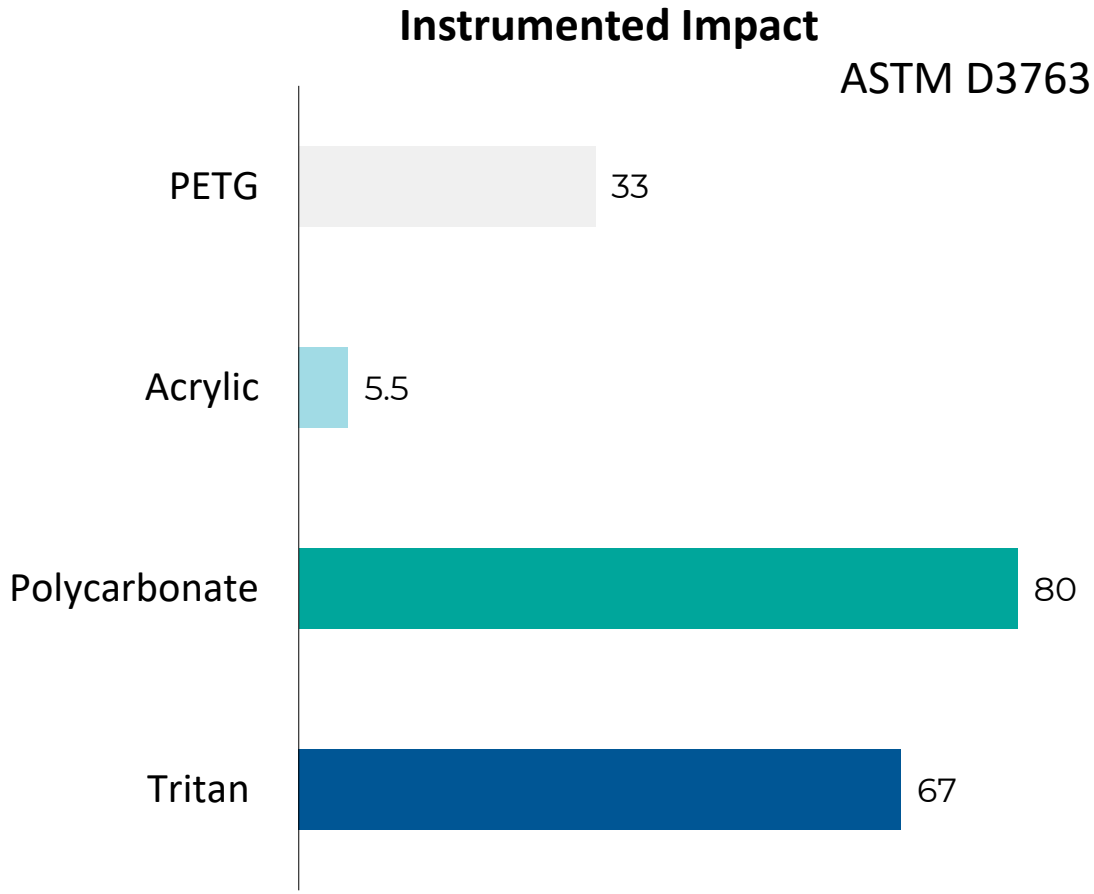
Tritan offers a safe, *shatter-proof* material

Superior toughness and **retains mechanical strength** after time in warm/humid environments, especially in thicker parts and at cold temperatures





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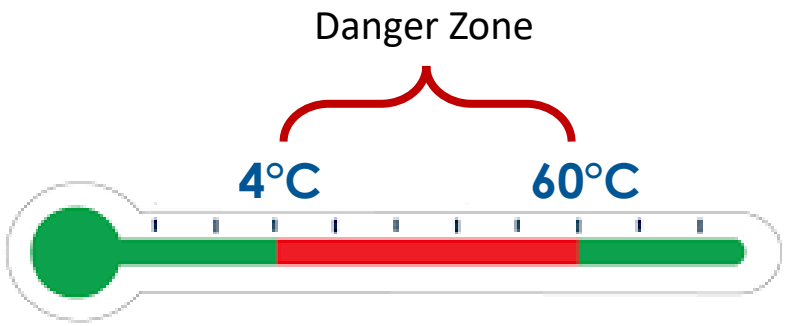
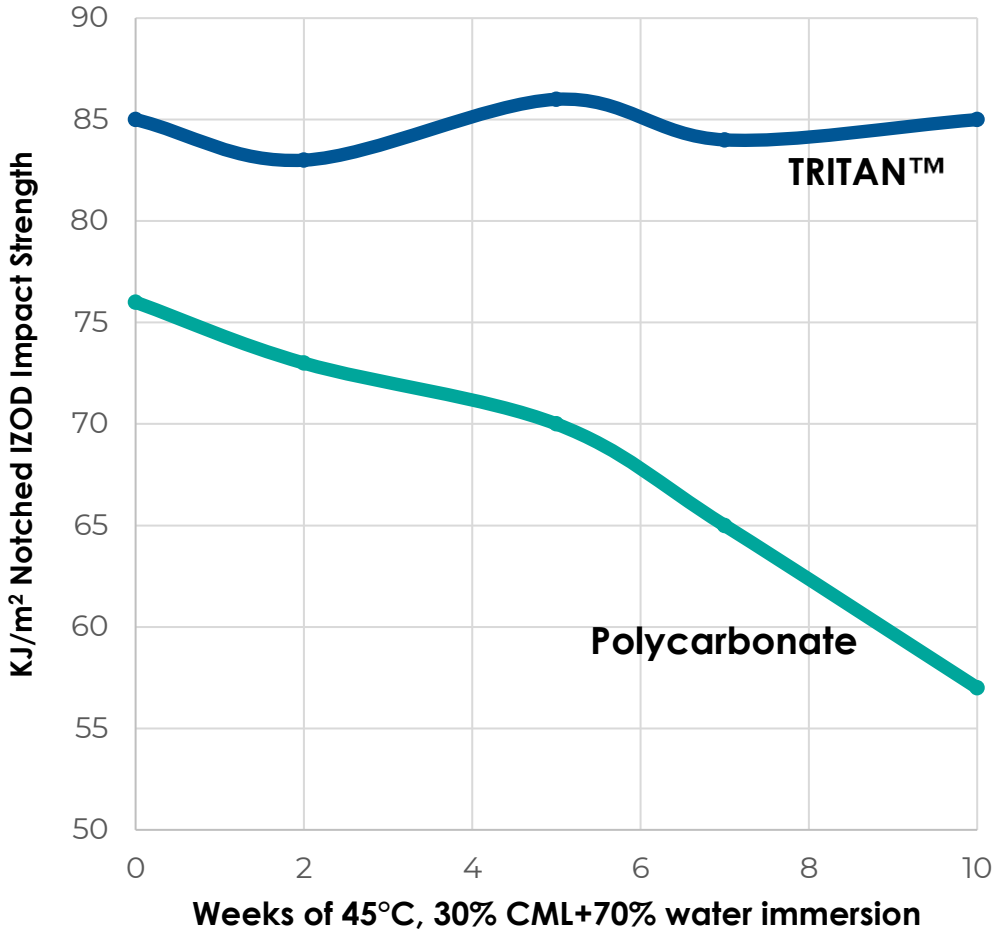
Tritan *maintains clarity* and *impact strength* at harsh temperatures & humidities



Plastics guards/covers must remain **clear, protective**, and not contribute to contamination while be exposed to a range of **cold/warm temperatures**, various **humidities**, and **repeated cleaning** for a long period of time.



Technical University Berlin
03/2025

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Aggressive daily cleaning protocol *includes* the plastic guards/covers

High temperatures: Heat sanitization could use temperatures **over 82°C** over a specified time

Chemical resistance: Different **cleaning agents** are used depending on the food types, so having high chemical resistance to all cleaning products is ideal.

Aging: Frequent washing at **elevated temperatures and humidity** can **accelerate the aging** process of polymers, leading to embrittlement and cracking

Abrasion: Daily **scrubbing** of the equipment can lead to scratching or hazing, resulting in **cloudy surfaces** that impair visibility

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High stress during fabrication combined with cleaning agents can lead to *cracking* or *failures*

Tritan™ exhibits **high resistance to chemical-induced crazing and stress cracking,** maintaining its mechanical integrity and dimensional stability under exposure to aggressive chemical environments

Material	% Impact Retention 1.5% Strain 24 hrs.					
	IPA	*Chlorine*	*Quat*	*Iodophor*	*Peroxy-acetic acid*	*Hydrogen Peroxide*
Tritan	85	94	93	97	98	95
PETG	61	97	95	90	90	95
Polycarbonate	19- 98*	3 – 26*	0 – 65*	100	100	98
PMMA	0	39	45	70	50	58
I-PMMA	25	53	55	77	60	70

Chemical resistance with externally applied stress, exposed to Virex™ Tb for 48 hours

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Choose Tritan™ Renew

The safe choice in protective food equipment

Eastman Tritan™ Renew copolyesters are highly durable, BPA-free material solutions that are **ideal for creating reliable, long-lasting food production equipment that meets EU regulations for food contact.**

Eastman Renew materials, powered by molecular recycling technology and ISCC PLUS certification*, provide **sustainable solutions without compromising performance.**

tritan™ RENEW
from eastman

*Eastman Renew materials are certified by ISCC using mass balance allocation.

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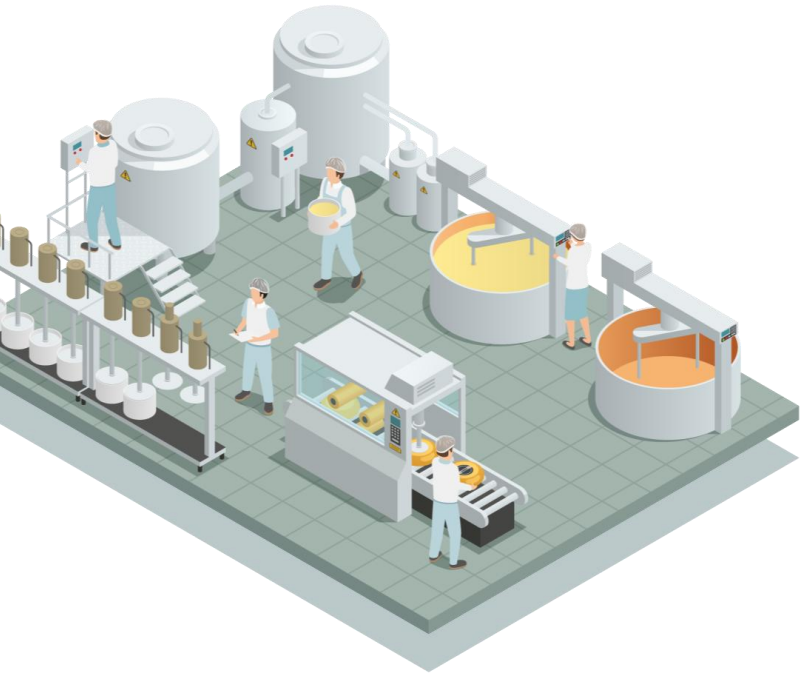
Key Takeaways



Eastman can support you in evaluating alternatives for Polycarbonate

BPA ban is in force NOW

- The European Commission Regulation (EU) 2024/3190 entered into force Dec 19th, 2024
- Companies need to start evaluating BPA free alternatives for food contact products now to meet transition deadlines
- Definitions include food processing equipment that are reasonably expected to be in contact with food

Protective guards on food equipment are in scope

- The examples shared highlight that these clear guards and covers require food contact materials, and therefore should be in scope
- Identifying the risk of non-compliance: If it can, it will

Tritan Renew is an easy to replace option

- Due to the harsh environments in a food production facility, protective guards need to be shatter-proof, maintain clarity and have chemical resistance to cleaning detergents
- Tritan Renew from Eastman is the perfect material choice to replace polycarbonate in this application

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Thank you

Let’s continue this conversation.

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