

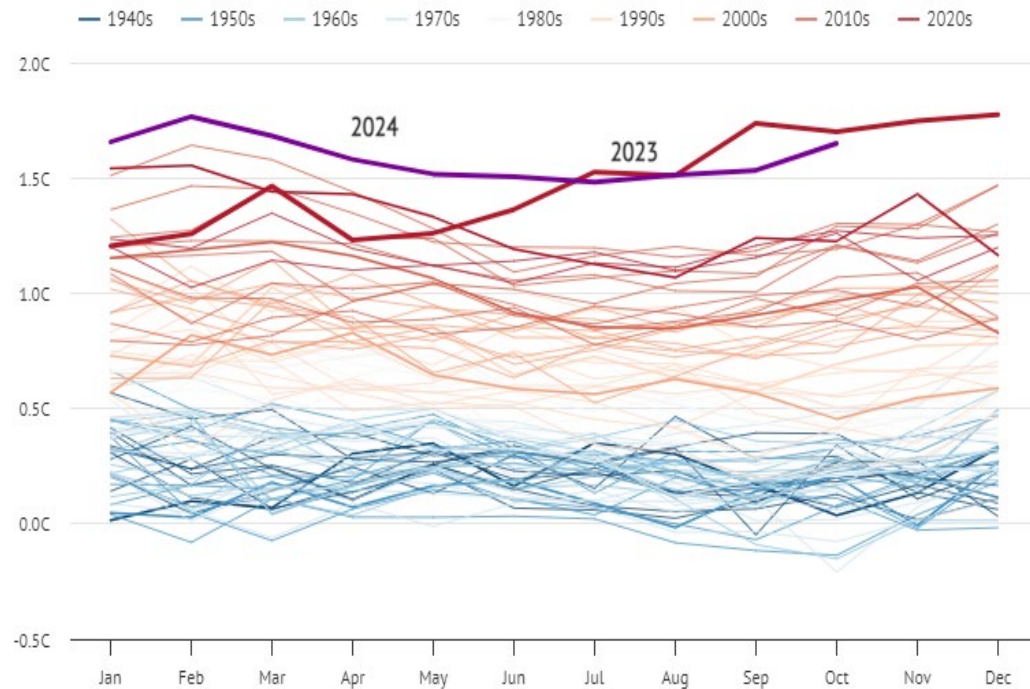
PLANET CONSCIOUS⁺

For a Sustainable Future

Which path are we on today ?

The past 13 months have been the warmest since records began

Monthly global average temperature anomalies, with a 1850-1900 baseline

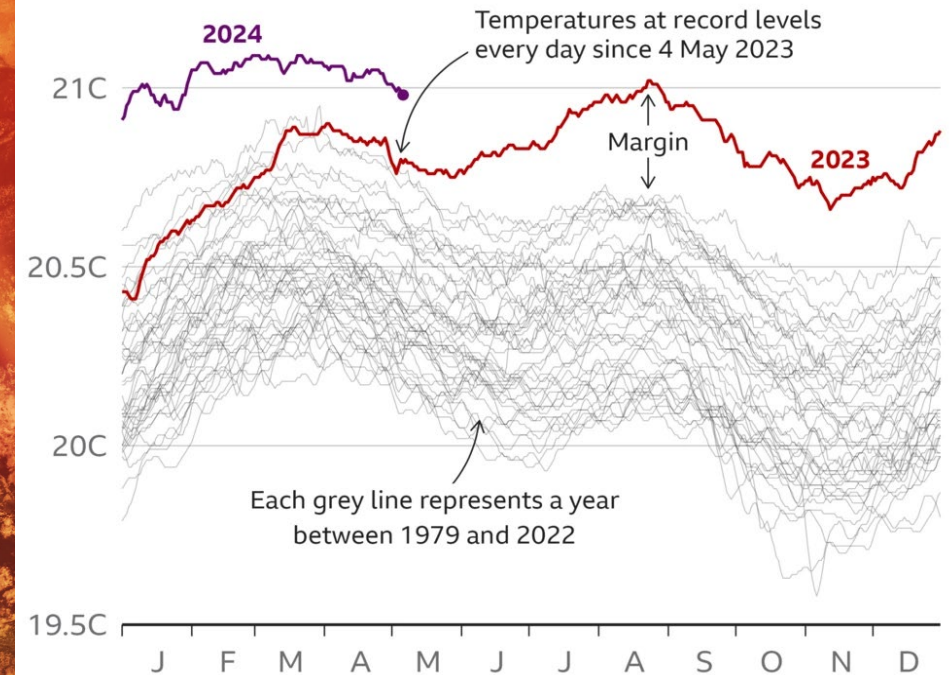


Source: Copernicus/ECMWF ERA5

CarbonBrief
CLEAR ON CLIMATE

A year of record-breaking ocean temperatures

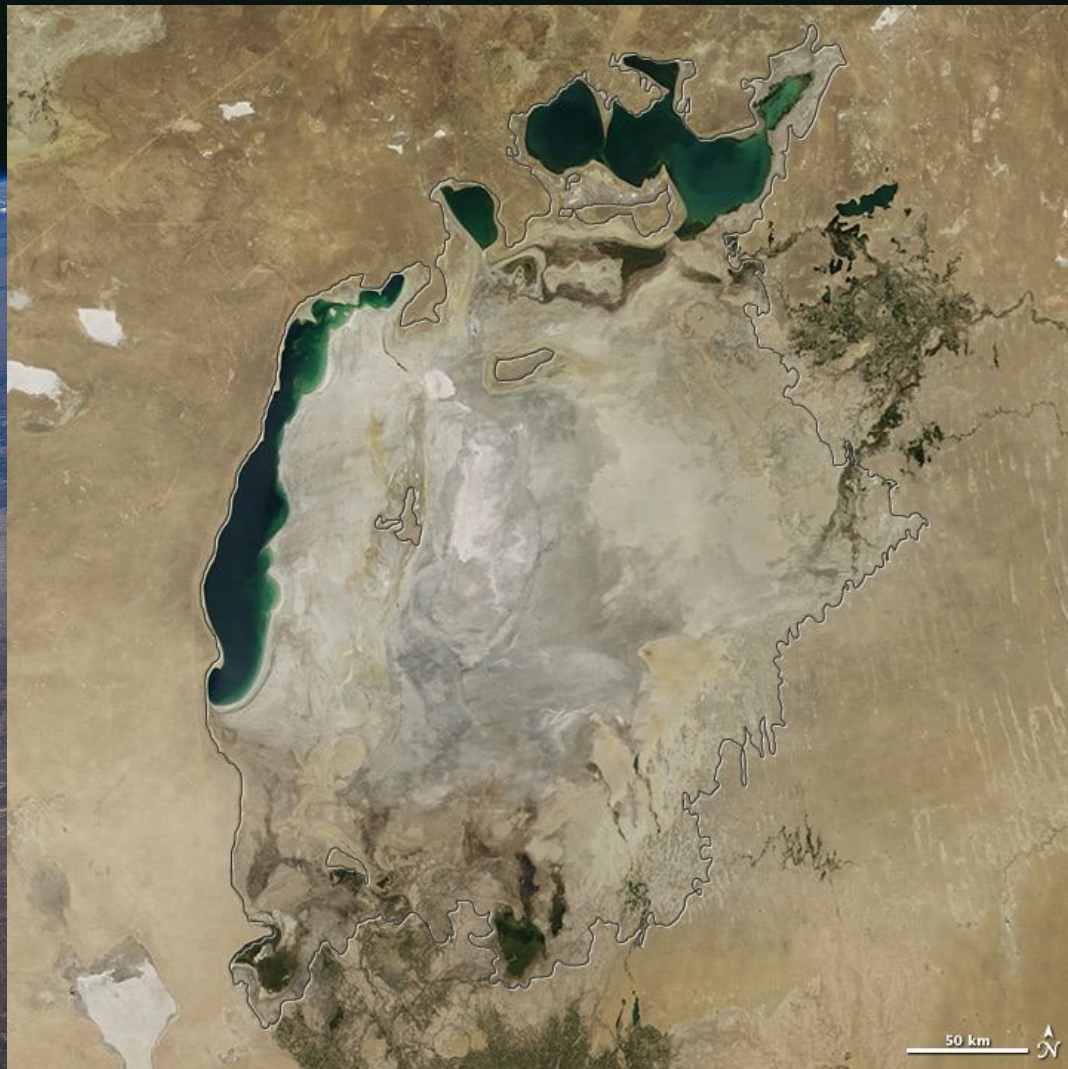
Daily average sea surface temperature, 1979-2024



Temperatures measured between latitudes 60° North and 60° South

Source: ERA5, C3S/ECMWF

BBC



The Aral Sea
Uzbekistan



Growing & processing of cotton



Microplastic pollution
from synthetic fibers

Progress leads to change.

Why do we need to fix the industry? The traditional model of production and management of resources, products and services promotes short-term consumption, thereby putting a significant pressure on environmental resources.



3,500km

THE AVERAGE DISTANCE A
T-SHIRT TRAVELS BEFORE
CONSUMER WEARS IT



92million tons

OF TEXTILE WASTE IS CREATED
ANNUALLY FROM THE FASHION
INDUSTRY



3 YEARS

AVERAGE LIFETIME OF
A T-SHIRT

Industry Challenges

How we address them ?



**Water
Consumption**



**Greenhouse
Gases**



**Embracing
Circularity**



**Chemical
Management**





Leading the way in
sustainable denim:
DENIM HALO

A smarter way to distress:

Why the industry needs DENIM HALO

DENIM HALO is a **patented Archroma technology** that combines an innovative pre-treatment with Archroma's unique sulfur and indigo dyestuffs for denim.

The superficial dyeing creates **laser-friendly denim** for popular worn or distressed **easy-washdown effects**, avoiding processes like manual hand scraping or potassium permanganate spraying.

Designed for compatibility with current mill workflows, it is easy to implement and scale, and delivers consistent, high-quality results.



Garment picture powered by Kipas Denim and Jeanologia

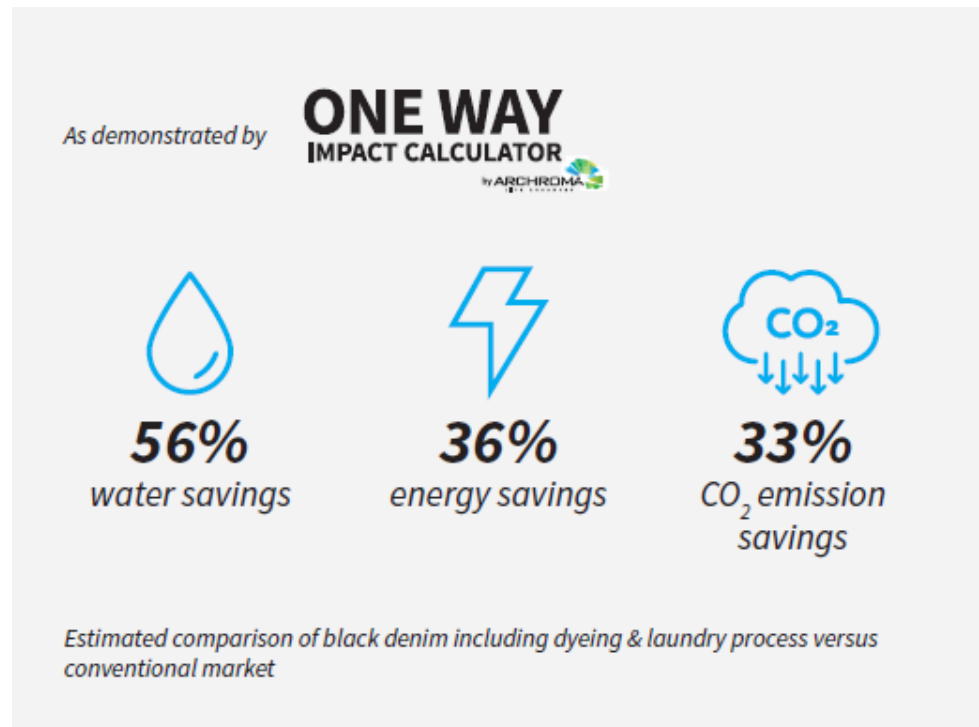
Lower footprint, cleaner future:

Proven environmental gains



DENIM HALO significantly reduces the chemical and environmental burden of distressed denim production.

It eliminates the need for potassium permanganate by enabling high-contrast laser etching, and lowers the use of caustic soda in sulfur mercerizing, leading to reduced water use and cleaner effluent.



PRE	1- Dirsol RD P 2-NaOH	1- Dirsol RD P 2-NaOH	NaOH	NaOH
Dyeing	DIREFUL EVOLUTION BLACK liq	DIREFUL BLACK RDT-K liq	DIREFUL EVOLUTION BLACK liq	DIREFUL BLACK RDT-K liq
Super System+	IMPACT Black Denim	IMPACT Black Denim	IMPACT Black Denim	FOUNDATION Black Denim
Ring dyeing effect	+++	+++	+	+
Resource saving	+++	+++	-	-
Less chemical use	+	+	-	-
Avoiding Permanganate	+++	+++	+	+
Tensile Strength Improvement	++	++	-	-

BLACK HALO

PRE	Dirsol RD P	1-Dirsol RD P 2: NaOH	Leonil EHC + NaOH	NaOH	Leonil EHC + NaOH
Dyeing	Denisol PURE indigo 30 liq	Diresul Smart Denim Blue liq	Denisol PURE indigo 30 liq	Diresul Smartdenim blue liq	Denisol Indigo 30 liq
Super System+	IMPACT+ Blue Denim	IMPACT+ Blue Denim	FOUNDATION+ Blue Denim	IMPACT+ Blue Denim	FOUNDATION Blue Denim
Ring dyeing effect	+++	+++	++	+	++
Resource saving	++	+++	-	-	-
Less chemical use	+	+	-	-	-
Avoiding Permanganate	+++	+++	++	+	++
Tensile Strength Improvement	++	++	++	-	++

BLUE HALO

DENIM HALO is part of the DENIM SUPER SYSTEMS+ portfolio. The BLACK and BLUE HALO concepts delivers high impact solutions across the board.

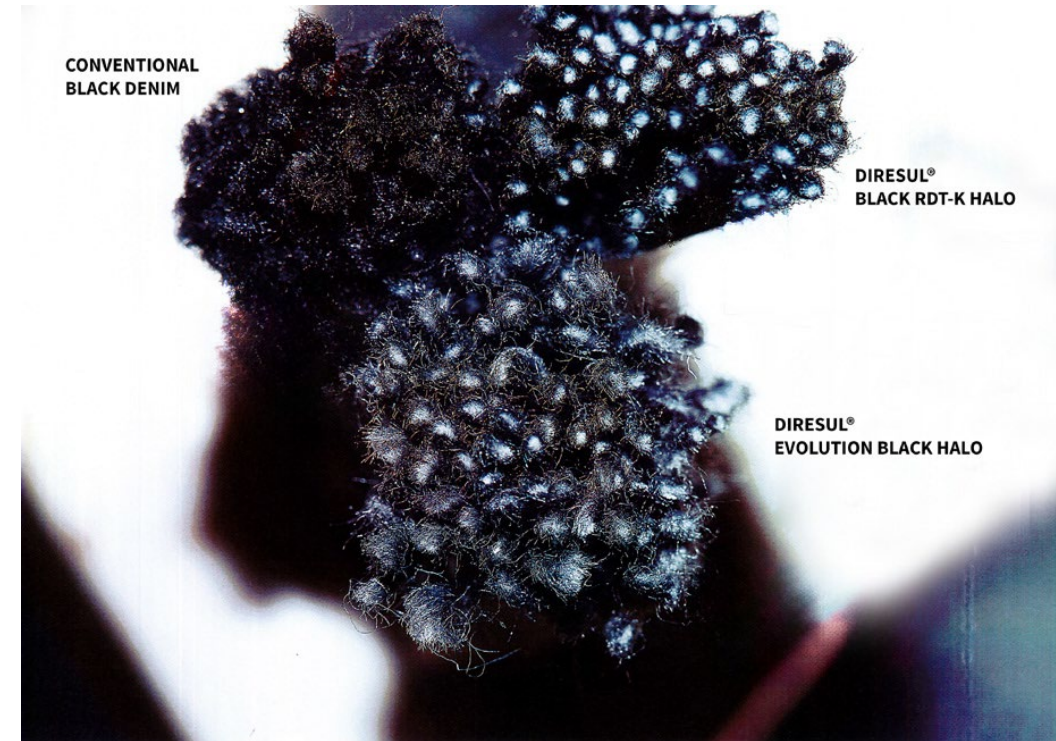
Innovating for performance:

The chemistry behind DENIM HALO

DIRSOL® RD, an anionic viscosity-modifying agent is what makes DENIM HALO unique. Developed in the Archroma labs, it's applied as a pretreatment and enables superficial dyeing, while also delivering significant resource savings in processing and laundering.

This breakthrough chemistry is combined with a tailored Archroma dye solution:

- **DENISOL® pre-reduced indigo dyes**, including DENISOL® INDIGO 30 for deep shades and reduced wastewater, and the pioneering aniline-free DENISOL® PURE INDIGO 30.
- **DIRESUL® pre-reduced liquid sulfur dyestuffs** with minimal sulfide content: EVOLUTION BLACK uses up to 56% less water during dyeing and laundering versus standard Sulfur Black 1 liquid; SMARTDENIM BLUE uses up to 70% less water.
- **EarthColors** are biosynthetic earth-tone dyes made from agricultural waste.



The combination of pretreatment and dye achieves a true ring-dyeing effect, creating laser-friendly denim while also reducing yarn shrinkage and improving garment tensile strength.

Safer, scalable, and economically sound: Real-world impact of DENIM HALO

The DENIM HALO concept enhances worker safety by reducing toxic chemical exposure and manual scraping.

The process is economically viable: it requires no major capital investment and is easy to implement, with fewer processing steps and faster washdown than conventional systems, plus reduced chemical, water, and energy use.

Technical Assistance

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The Sustainable Ecosystem