



CTL LEATHER

A Garrett Leather Company

CTL Chrome-Free vs  
Chrome-Tanned Leather



# KEY TAKE AWAY: CHROME-FREE VS CHROME-TANNED LEATHER

“The term ‘*chrome-free*’ sounds greener, but it often just means a **different tanning agent** — not necessarily less impact. Some of these alternatives use aldehydes or synthetics that still require proper disposal.

And they often need **more water and energy to process.**”

“In contrast, chrome tanning — when done responsibly — is one of the **most efficient and stable tanning methods**. It uses *Chromium III*, which is **non-toxic**, tightly regulated, and safe in leather form.”

## Targeted Takeaway for Hospitality & Office Designers:

**It’s not about chrome vs. chrome-free. It’s about performance, lifecycle, and responsible sourcing.** A high-quality chrome-tanned leather often outlasts and outperforms — which means **fewer replacements, less waste, and real sustainability.**

## Key Message for the Market:

**“Chrome-free doesn’t always mean greener.**

Chrome tanning, when responsibly done, can be just as sustainable—sometimes more—due to its efficiency,

durability, and recyclability. It’s about **how** the leather is made, not just **what’s in it.**”

## ● The Past: Why the Negative Perception?

- Older chrome tanning methods sometimes involved **unsafe disposal of chromium waste**, especially **chromium VI**, which is toxic and carcinogenic.
- Tanneries decades ago didn’t always have the environmental controls or wastewater treatment we have today.
- This led to pollution and health concerns that gave chrome tanning a bad name.
- The term “chrome” became shorthand for “harmful chemicals” in many people’s minds.

## ● The Present: What Has Changed?

- Today, chrome tanning uses only **Chromium III**, which is **non-toxic, stable, and safe**. Chromium III cannot convert into harmful Chromium VI in the tanning process.
- Modern tanneries employ **strict environmental controls**, including **closed-loop water systems** and **advanced waste treatment**, minimizing environmental impact.
- The process is **highly efficient**, uses less water and energy than many alternative tanning methods, and produces leather with superior durability, meaning longer product life and less waste.
- Many tanneries hold **third-party certifications** like the **Leather Working Group (LWG) Gold standard, Oeko-Tex**, and **Cradle to Cradle**, proving their commitment to environmental responsibility.
- The focus today is on **traceability, transparency, and sustainable practices** — chrome tanning is no longer a “dirty secret,” but a carefully managed process aligned with green goals.



# LEATHER TANNING SUSTAINABILITY COMPARISON: CHROME-FREE VS CHROME-TANNED



Feature	Chrome-Free Leather	Chrome-Tanned Leather
Tanning Agent	Plant-based, synthetic, or aldehyde alternatives	Chromium salts (mostly Chromium III)
Biodegradability	Often marketed as more biodegradable	Can also be biodegradable if tanned & finished cleanly
Environmental Impact	Depends on chemicals used – not always “clean”	Efficient process, low water use, stable end product
Water & Energy Use	Can be <b>higher</b> due to longer processing	More <b>efficient</b> , faster process
Chemical Residue Risk	Lower risk of heavy metals	Chrome III is safe; misperception about “toxic” risks
Durability / Lifespan	Varies – sometimes less stable without chrome	High durability = longer product lifespan = less waste
Circularity	Not always compatible with traditional recycling	Established recycling streams exist
Waste Treatment Requirement	Still needs proper treatment for aldehydes, synthetics	Chrome must be captured & neutralized – modern systems manage this well
Certifications Possible	Can be certified eco-friendly (e.g. Oeko-Tex, LWG)	Also eligible for same certifications



Feature	Chrome-Free Leather	Chrome-Tanned Leather
Durability & Performance	May have less heat/stain resistance over time	Industry standard for high-traffic use — excellent performance over years
Aesthetics	Often lighter in tone, can age unevenly	Deep color retention, soft hand, resists UV fading
Wear & Tear (e.g. lobby seating)	May soften too quickly or dry out in HVAC-heavy spaces	Holds structure and finish under daily use in lobbies, lounges, workstations
Cleaning & Maintenance	Sensitive to aggressive cleaners; less chemical resilience	Compatible with commercial cleaners, making it ideal for hospitality/office use
Sustainability Perception	Seen as more “natural” or “eco” due to name	Often unfairly dismissed — yet chrome-tanning is water-efficient & durable
Actual Environmental Footprint	Can be higher due to longer processes, more water/energy usage	More efficient tanning; chromium III is safe & fully managed in modern systems
End-of-Life / Longevity	Shorter life = more frequent replacements (more waste over time)	Long lifecycle = less landfill, lower material turnover
Certifications	Can meet standards (e.g. LWG Gold, Cradle to Cradle, Oeko-Tex)	Also meets same standards — it’s the process, not just the chrome

# HOSPITALITY & OFFICE LEATHER

## COMPARISON: CHROME-FREE VS CHROME-TANNED







# Q&A: CHROME-FREE VS CHROME-TANNED LEATHER

## “IS CHROME-TANNED LEATHER BAD FOR THE ENVIRONMENT?”

Not when it's responsibly made. Modern chrome tanning uses **Chromium III**, which is **non-toxic and tightly regulated**.

It's an efficient process that reduces water and energy use, and when managed properly, it's just as **sustainable — sometimes more — than chrome-free** options.

## “AREN'T CHROME-FREE LEATHERS MORE ECO-FRIENDLY?”

It depends. “Chrome-free” sounds greener, but many of these leathers use **aldehydes or synthetic agents** that also require safe handling and disposal. Some even consume **more water and energy** during production.

True sustainability comes from **traceability, lifecycle durability, and end-use performance** — not just the tanning label.



# WILL CHROME-TANNED LEATHER PERFORM BETTER IN HIGH-TRAFFIC SPACES LIKE LOBBIES OR OFFICES?”

Yes. Chrome-tanned leather is **naturally more resistant** to heat, humidity, body oils, UV, and repeated use. That's why it's been the gold standard for **hospitality and commercial interiors** for decades — it holds up and stays beautiful with **less maintenance and fewer replacements**.

# “CAN WE STILL ACHIEVE A CLEAN, SOFT, AND MODERN LOOK WITH CHROME-TANNED LEATHER?”

Absolutely. Chrome-tanned leathers come in **rich, clean finishes** with **consistent color** and a wide variety of textures — from ultra-smooth to natural grain. They're also more stable in colorfastness, making them ideal for **modern interiors** with large windows or bold palettes.





# “WHAT ABOUT CERTIFICATIONS? CAN CHROME-TANNED LEATHER BE SUSTAINABLE-CERTIFIED?”

Yes. Many top tanneries producing chrome-tanned leather meet **LWG Gold**, **Oeko-Tex**, and **Cradle to Cradle** standards. It's all about **transparency in the supply chain** and how the leather is managed — not just whether chrome is present.

# “IF WE WANT TO MEET LEED OR WELL BUILDING GOALS, SHOULD WE AVOID CHROME?”

Not necessarily. If your chrome-tanned leather comes from a **certified, responsible tannery**, it can still align with sustainability goals. Focus on **total environmental impact**, including **product longevity and reduced replacement cycles**, which both LEED and WELL value.







# WHY SHOULD YOU USE LEATHER?

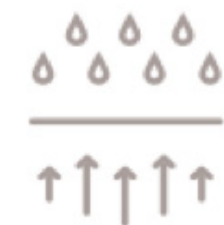
LEATHER IS AN INCREDIBLY UNIQUE AND VERSATILE MATERIAL, WITH DIFFERENT PROPERTIES AND CHARACTERISTICS. **GET THE FACTS.**

Leather is one of the most versatile materials known. This is due to the unique arrangement of complex natural fibres that give the variations on the different types of hides and skins. Chemical and physical processes are tailored to give **specific properties** and **performance** to the hides and skins as they are being converted into leather.

## FOR DEFINITION:

Those from small animals are called **skins**, and those from large animals are called **hides**.

HERE WE **HIGHLIGHT** SOME OF THE MOST **IMPORTANT VARIATIONS** OF KEY LEATHER PROPERTIES:



## Water-Resistance

Leather can be made to **absorb** water, **resist** water or be completely **waterproof**. Most leathers manufactured for the shoe, bag, upholstery and leather goods industries offer a degree of water resistance that enables the leather to get wet yet, after drying, retain the properties of **elasticity** and **shape**. Waterproofing can be made for specific applications, particularly for outdoor shoes and boots that allow for walking several hours in the rain without getting wet feet. **Most waterproof leathers are made from cattle hides.**

## Thickness

**Skins** produce **thin leathers** that can be used for bookbinding, gloves, lining and garments; they have outstanding softness.

**Cow leather** can have a great **variation of thicknesses** because they can be split in layers. When split thin, leathers can be used for garment, gloves and leather goods. **Medium thickness** leathers, on the other hand, are more widely used for upholstery,



SKINS



HIDES



## Water Absorption & Desorption

This is one of leather's unique properties, allowing leather to **absorb** moisture and with time **release** it into the environment. For shoes, this property creates outstanding comfort not found in any other material. **Perspiration** is drawn from the foot into the leather and then **evaporates** from the outer surface of the shoe. Leather can hold large quantities of moisture without feeling damp so the foot stays dry and comfortable without the chill of fast evaporation or puddling of cooling perspiration.

## Water Vapor Permeability

Often called '**breathability**', this characteristic allows moisture and air to permeate through the leather. This property is particularly important for shoes' comfort; as the foot sweats it can produce large amounts of moisture that move through the leather to the outside, keeping the inside of the shoe **drier** and more **comfortable**, with a lower moisture level. Waterproof leathers that are engineered to maintain breathability while providing protection from wet conditions will provide an outstanding **combined performance**.



## Aesthetics & Surface Pattern

There are many variations to the colour, texture, feel, smell, surface resistance and handle of leather that makes this product **extremely unique** and **valuable**. Leathers can be as natural as observed in pure vegetable leather or as refined with outstanding performance as an automotive seat. Leather is fashionable in all colours while maintaining outstanding **technical performance**.

## Heat Insulation

One of the main reasons why leather is comfortable on the human skin is because of its strong **thermal insulation** capabilities. Heat insulation is a measure of the rate at which heat passes through a material. And because leather contains a large **volume** of air (which is a poor **conductor** of heat), the heat travels incredibly slowly through the material.



## Malleability

Another factor that makes leather such a favourable material is because of its ability to be **moulded** into a new shape. It can be made to either **stiffen** or can be made to be flexible and will retain its new shape as required. This is very important in footwear, since both feet are rarely exactly the same size and shape. With a little





# HIDES & SKINS ARE A NATURAL BY-PRODUCT OF THE MEAT INDUSTRY



LEATHER MANUFACTURERS UPCYCLE THEM INTO BEAUTIFUL, VERSATILE, VALUABLE SUSTAINABLE PRODUCTS



THIS REDUCES THE AMOUNT OF WASTE THAT GOES TO LANDFILL



SHARE THE MESSAGE

