

一、Chitosan:

Needle-punched cotton、Fiber、Chitosan silver fiber、Chitosan quick-absorbent fiber Chitosan water-soluble fiber、Chitosan facial mask、Chitosan eye mask、Chitosan needle-punched、composite nonwoven fabric、Chitosan spunlace composite nonwoven fabric 100%、chitosan spunlace nonwoven fabric 100%、chitosan needle-punched nonwoven fabric、Chitosan hot-rolled nonwoven fabric、Sanitary napkin-specific nonwoven fabric、Mask-specific nonwoven fabric、Chitosan hot-air nonwoven fabric.

二、Chitin: $(C_8H_{13}O_5N)_n$ Also known as chitin, N-acetylglucosamine polymer, or "nJ substance" (if a specific term in Chinese). The English name is chitin. Discovered in 1811 by the French scholar Braconno, and first extracted from crustacean shells by Odier in 1823. It appears as pale yellowish-white in color, soluble in concentrated hydrochloric acid, phosphoric acid, sulfuric acid, and formic acid, but insoluble in alkalis, other organic solvents, and water. When chitin undergoes deacetylation, it produces its derivative, chitosan (Chitosan). Chitosan is insoluble in water but soluble in certain dilute acids.

Chitosan Nonwoven Fabric:

A natural biopolymeric material extracted from crustaceans, primarily composed of chitin/chitosan derivatives. Through processes such as needle-punching, spunlacing, hot-rolling, and hot-air bonding, it is manufactured into nonwoven fabric. This material combines the bioactive properties of chitosan with the physical characteristics of nonwovens, offering versatile functionalities in medical, cosmetic, and environmental protection applications.:

1.Core Functional Efficacy of Chitosan

A. Antibacterial & Antimicrobial Action

Chitosan's cationic properties disrupt bacterial cell membranes, effectively inhibiting the growth of common pathogens (e.g., *Staphylococcus aureus*, *E. coli*) and reducing infection risks.

B. Hemostatic Function

Chitosan activates platelet aggregation and accelerates blood clotting, making it particularly suitable for superficial wounds or post-surgical incisions.

C. Tissue Regeneration Promotion

By stimulating fibroblast proliferation and collagen synthesis, chitosan enhances wound repair and minimizes scar formation.

2. High Absorption & Moisturizing Properties

A. Exudate Absorption The lofty, porous structure of the nonwoven fabric rapidly absorbs wound exudate, maintaining a moist wound surface without sticking, thereby preventing secondary trauma.

B. Hydration Retention Chitosan's inherent moisture-locking ability helps sustain an optimal humid microenvironment at the wound site, facilitating cell migration and epithelialization.

3. Biocompatibility & Safety

A. Hypoallergenic Properties

Naturally derived chitosan is non-toxic and harmless to the human body, making it suitable for sensitive skin and postoperative fragile tissue.

B. Biodegradable & Eco-Friendly

The material can be broken down by bodily acids or naturally degraded, significantly reducing environmental impact.

三、 Primary Application Scenarios

1. Medical Field

A. Surgical Applications Used for postoperative wound coverage and hemostatic dressings.

B. Chronic Wound Care Effective for diabetic foot ulcers, pressure sores, burns, and other hard-to-heal wounds.

C. Gynecological & Pediatric Use Gentle and non-irritating, suitable for mucous membranes and infant skin care.

2. Beauty & Skincare Field

A. Post-Procedure Recovery Calming and repairing post-laser or micro-needling treatments (e.g., soothing masks).

B. Daily Skincare Chitosan-infused cotton pads or masks to soothe sensitive skin and balance hydration/oil levels.

3. Environmental Protection Biodegradable hygiene products: Eco-friendly sanitary pads or diaper absorption layers.

四、 Usage Precautions

1. Patch Test Recommended Rare cases of chitosan allergy may occur; perform a patch test before first use.
2. Wound Cleaning Required For severely infected wounds, debridement is necessary before application.
3. Storage Conditions Keep sealed in a dry place, away from high temperatures or direct sunlight.

五、 Competitive Advantages vs Other Wound Dressings

Feature	Chitosan Nonwoven Fabric	Traditional Cotton Gauze
Antimicrobial	Natural antibacterial properties reduce infection risk	No inherent antimicrobial function; requires external antiseptic
Wound Adhesion	Soft conformability minimizes friction & tissue damage	Prone to adhere to wounds, causing trauma during dressing changes
Biodegradability	Fully biodegradable (environmentally friendly)	Non-degradable (generates medical waste)

Medical Use Considerations: Must select products with medical device certifications (e.g., China NMPA, US FDA clearance). Strictly follow medical professionals' guidance for proper use.