

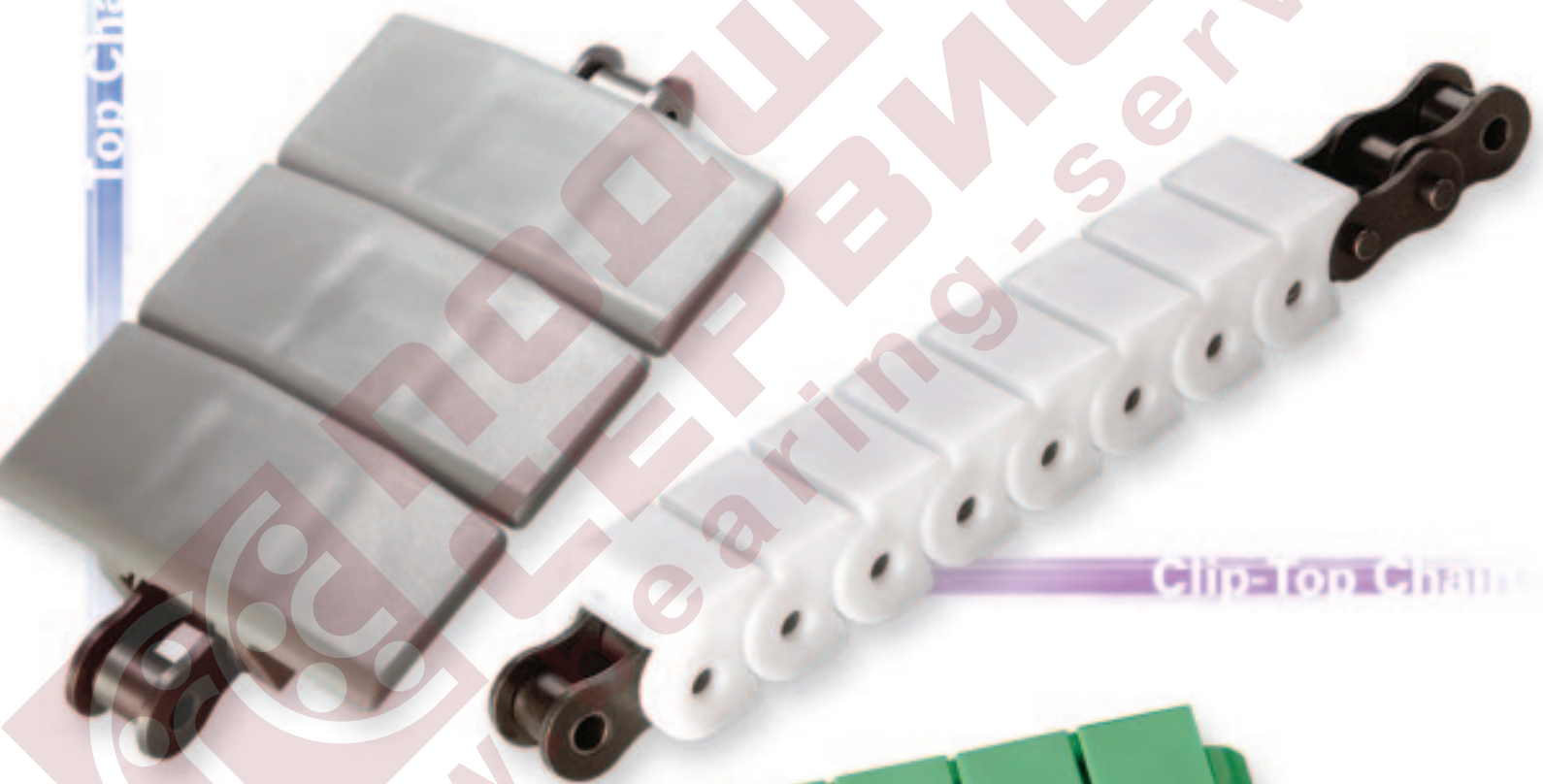


U.S. Tsubaki, Inc.

Roller Chain Division

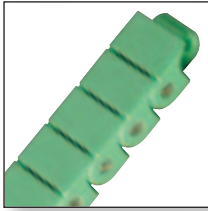
Industrial Plastic Chains

Specially formulated plastics
for tough applications



The Light Way to Roll

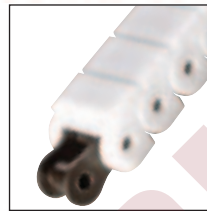
RS Plastic Chains



RS Plastic Chains move product on line without scuffs or scratches. Lightweight and lube-free, these strong, long-lasting chains set the standard for reliable performance. Choose standard polyacetal links or get enhanced performance with

one of our innovative plastics. Move product faster, stop bacteria and mold from forming, operate at very high temperatures, end static discharge, and much more — all without time-consuming reconfiguration or retooling.

Clip-Top Chains

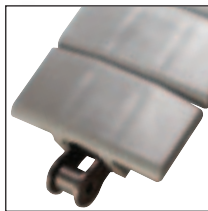


U.S. Tsubaki Clip-Top Chains combine the power of steel with the convenience of plastic for conveying materials quickly and efficiently. Clip-Top Chain features a steel base, providing the same maximum allowable load as comparable steel chain. Engineering

plastic covers allow conveyed materials to be placed directly onto the chain without damage. Ideal for conveying cardboard boxes, glass products, and plastic goods, this is a safe and efficient way to move products through your operation.

Chains are available in standard steel or nickel-plated to resist corrosion. Three types of engineering plastic covers meet the needs of difficult situations.

Top Chains



U.S. Tsubaki Top Chains let you choose the right combination of high-quality steel and our special engineering plastics to maximize continuous conveying applications. Our unique top plates provide quiet, smooth operation that won't damage

product. Pin materials include carbon, nickel-plated, or stainless steel, as well as plastic for long-lasting performance in wet conditions. Curved and linear designs are available to meet your strength, speed, and space requirements.

Top Chain from U.S. Tsubaki is ideal for continuous conveying applications; including bottling, canning, and packaging of beverages, food, pharmaceuticals, chemicals, and cosmetics; as well as for conveying machine parts.

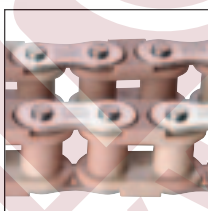
Roller Table Chains



U.S. Tsubaki Roller Table Chains offer clean, quiet, trouble-free performance for conveyor applications. Our engineered plastic rollers reduce line pressure during accumulation to protect conveyed objects from damage and ensure smooth transfers

from line to line. Roller Table Chains from U.S. Tsubaki use standard sprockets and are easy to assemble and virtually maintenance-free. Choose RT Type for a low-friction alternative to Table Top Chain or ST Type when product must be loaded at right angles to the conveyor flow.

Poly-Steel Chains



U.S. Tsubaki Poly-Steel Chains are made to exacting specifications from polyacetal and stainless steel, providing resistance to heat and corrosive conditions. The polyacetal inner links and 304 stainless steel pins combine the advantages of both materials

into a strong, long-lasting chain. Poly-Steel Chain is also available in a chemical-resistant series. Poly-Steel Chain can be used in drive and conveying applications and accommodate standard attachments to meet the needs of your operation.

Industrial Plastic Chains From America's Chain Experts

Get the right chain for your application

You just can't beat Industrial Plastic Chain from U.S. Tsubaki as an economical alternative to steel chain. We put the same quality commitment into our Industrial Plastic Chain that you normally count on from U.S. Tsubaki:

- Top-grade materials, precision-manufactured at our ISO-certified facilities.
- Outstanding customer service.

Our Industrial Plastic lineup — RS Plastic Chain, Clip-Top Chain, Poly-Steel Chain, Top Chain, and Roller Table Chain — is ideal for accumulating, electronic, sanitary, and corrosive applications. You get the quality and performance you expect from U.S. Tsubaki with the money-saving features of a plastic chain.

Lube-free

Keep your lines running longer with less downtime for maintenance. U.S. Tsubaki Industrial Plastic Chains offer long wear life for excellent performance in "clean" applications.

Low noise

Create a quiet, worker-friendly environment without the need for expensive soundproof enclosures. Boost employee morale AND productivity!

It Pays to Choose U.S. Tsubaki:

- Reduced maintenance
- Lower operating costs
- Improved productivity
- Solutions to keep your operation running better and longer

Revolutionary Industrial Plastics Innovations for your operation

Improve your operation — from the chain up

We combined our chain expertise with new, innovative plastics to create Industrial Plastic Chains that do more than turn. They solve problems. That's why we call them the profit protectors.

Specially formulated plastics for tough applications

Need speed? Fighting friction? Is static electricity, bacteria, or chemical corrosion costing you time and money? U.S. Tsubaki has innovative plastics and chains for your application. In fact, many of these products are so advanced, they're patented!

Challenges?	U.S. Tsubaki Solutions!
Unstable conveying because of poor sliding	MW/UMW
Product buildup	MW/UMW
Toppling bottles	MW/UMW
Short wear life	MW/UMW
High running cost	MW/UMW
Cost to lubricate	MW/UMW
Corrosion in acidic or alkaline conditions	Y/SY/AR
Bacteria or mold buildup	MWS
Damage by hot water and high temperatures	KV
High speeds causing premature wear	KV
Dust adhesion	E/SE
Static electricity	E/SE
Sparks	E/SE
Convey up inclines	HF
Bring up to speed fast	HF
Ultraviolet rays	UVR



KV SERIES

Y | SY | AR SERIES

UVR Series

High-Temperature, High-Speed Applications

KV SERIES

KV chains can operate at speeds and at temperatures that were once impossible for plastic chains. KV has heat-resistant qualities comparable to metal, making it the plastic of choice for high-temperature applications.

Choose KV180 when temperatures and speed make standard plastic chains impractical. Choose KV250 when even greater strength is required in higher temperatures.

Operating Conditions

Compare standard plastic chains with KV180 and KV250. KV sets a new standard for handling high temperatures and speed.

	Standard	KV180	KV250
Ambient operating temp. (°F)	176	356	482
	Standard	KV180	KV250
Max allowable speed (ft./min.)	200	330	330

Max. allowable speed changes in temperatures of 122°F or higher.

Chemical Applications

Y/SY/AR SERIES

Fabricated from advanced engineering plastic, Y and SY chains resist chemical environments. Y and SY Series are ideal for handling the inspection, packaging, and cleaning of light electrical appliances and devices as well as food items, pharmaceuticals, and chemical products. AR Series chains, which are manufactured with chemically resistant plastic and stainless steel pins, provide even higher levels of chemical resistance and are excellent in bottling plants.

Chemical Resistance

Y chains are designed to resist chloride, acids, alkalis, oxidizers, and most organic solvents.

SY chains handle the same chemicals as Y chains, plus their titanium pins provide extra resistance to strong chemicals, including sulfuric acid and hydrochloric acid.

AR chains resist lubricants that contain hypochlorous acids, such as those used in beverage and beer bottling plants.

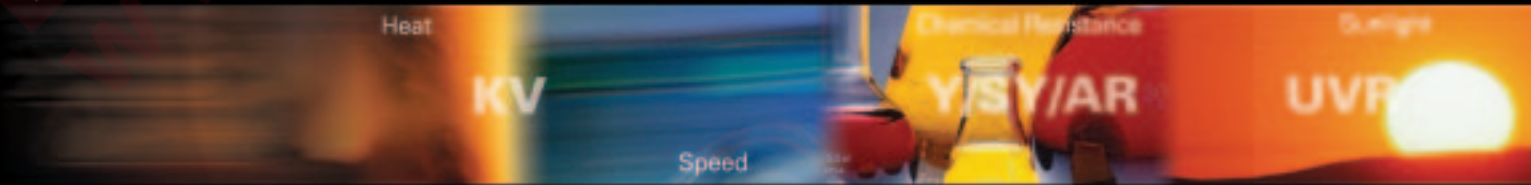
Temperature

Chains provide optimal performance at temperatures between -4° and 176°F.

Ultraviolet Rays

UVR SERIES

UVR chains stand up to the damaging effects of ultraviolet rays, such as those used in paint curing and drying lines, and they are ideal if chains are exposed to sunlight.



MW | UMW
SERIES

HF SERIES

E | SE SERIES

Low-Friction and Ultra Low-Friction Applications

MW/UMW SERIES

Product can stick to conventional chains, causing damage and costly line breaks. Low-friction and ultra low-friction plastic chains keep product moving efficiently. MW Series has a coefficient of sliding friction 15 to 45 percent less than standard plastic chains without additional lubrication, and UMW—ultra low-friction chains—are 15 to 30 percent less than low friction. Product practically flies downline. Move, accumulate, and finish—fast! MW and UMW are ideal for milk-packing lines, bottling/canning lines, and PET-bottle production facilities.



MW Series (white)



MWG Series (green)



MWB Series (brown)

Available in three colors to simplify differentiation between plant lines.

Sliding Friction Coefficient

Material	Lubrication Conditions	Standard	Chain Type	
			MW	UMW
P Plastic rail (new light)	Dry	0.25	0.18	0.15
M Plastic rail	Soapy water, oil	0.12	0.12	0.11
	Dry	0.25	0.17	0.14
A Plastic rail	Soapy water, oil	0.12	0.12	0.11
	Dry	0.25	0.17	0.14
Steel and steel rail	Soapy water, oil	0.15	0.12	0.11
	Dry	0.25	0.17	0.14
Metal cans	Soapy water, oil	0.12	0.12	0.11
	Dry	0.22	0.12	0.10
Glass pins	Soapy water, oil	0.12	0.12	0.10
	Dry	0.25	0.16	0.13
Plastic containers	Soapy water, oil	0.15	0.15	0.11
	Dry	0.30	0.25	0.18
Paper packs	Soapy water, oil	0.20	0.20	0.12

High Friction

HF SERIES

HF chains stabilize product on line, allowing movement up inclines or for non-sliding applications.

Electroconductive Applications

E/SE SERIES

Static electricity can create havoc with high-speed lines, causing downtime and damaged product. If static electricity, dust buildup, and sparking are a problem, consider E and SE Series chains. Fabricated from special plastics, these chains discharge static electricity so you can keep lines running at optimum levels.

Electroconductive Series

E Series chains are designed to discharge static electricity before it becomes a problem. Use E chains in areas where sparks, electrical noise, and dust adhesion can cause problems, including assembly lines for circuit boards, electronics, monitors, and television tubes.

Volume resistance: $1 \times 10^6 \Omega \cdot \text{cm}$

Static Electricity Resistance

SE Series chains provide excellent resistance to static electricity. They are ideal for canning, and food conveying, but do not have a high enough resistance to handle circuit boards or electronic components.

Volume resistance: $1 \times 10^{13} \Omega \cdot \text{cm}$





MWS SERIES

Antibacterial/Anti-mold Operations

MWS SERIES

U.S. Tsubaki MWS chains fight bacteria and mold, making them the chains of choice for high-profile applications. The plastic that forms MWS chains is infused with unique compounds that fight the formation of a variety of pathogens. Even if the surface wears, the antibacterial properties continue to fight, protecting the product on line. And the compounds are safe for both the environment and for humans.

MWS chains are powerful performers. Not only do they fight bacteria and mold, they outlast standard plastic chains for longer service life with lower replacement costs. And they are low friction, so product moves quickly and efficiently through the process.

Sample Operations

- Bottling factories for more effective washdowns and to prevent mold and bacteria formation in rinse and sterilization areas.
- Bottling and canning factories where moisture from spills or overruns creates a bacteria-friendly environment.
- Food industries that need to meet sanitary guidelines throughout the factory and to convey food directly before sealing.
- Pharmaceutical manufacturers — especially clean rooms — that want speed, efficiency, and protection.

Effectiveness Against Pathogens

Bacteria	Chain Type	Immediately after vaccination (pcs)	24 hours later (pcs)
Staphylococcus aureus	MWS	140,000	No trace
	Other	140,000	29,000
Saccharomyces	MWS	2,100	No trace
	Other	2,100	790
E coli O-157 (H7)	MWS	60,000	No trace
	Other	60,000	1,800
E coli	MWS	240,000	No trace
	Other	240,000	20,000,000
Lactobacillus	MWS	12,000	No trace
	Other	12,000	50

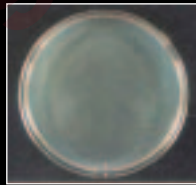
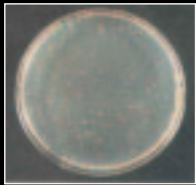
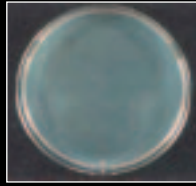
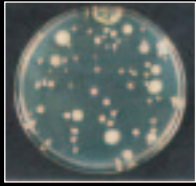
Mold	Chain Type	After 7 days	After 14 days	After 21 days
Penicillium	MWS	0	0	0
	Other	1	1	3

Test Reference Chart

Conducted in accordance with ASTM-G21

- 0 No recognizable mold growth
- 1 Very small traces of mold (<10% of tested surface)
- 2 Small amounts of mold (10-30% of tested surface)
- 3 Moderate amounts of mold (30-60% of tested surface)
- 4 Large amounts of mold (>60% of tested surface)

MWS Antibacterial/Anti-mold After 24 hours at 35°C

Bacteria	Anti-mold (MWS)	Other (MW)
Staphylococcus		
Saccharomyces		

Testing Methods:

Based on the Antibacterial Processed Goods Test Method I (1995 edition) Film Contact Method
Conducted by JAPAN FOOD RESEARCH LABORATORIES.

Test results Issued On August 6, 1997

Test Results Reference Number 397050652-002 & 397050652-003

Antibacterial/Anti-mold

MWS

Speed

U.S. Tsubaki Industrial Plastic Chain Availability Matrix

		Standard	Ultra Low Friction	Low Friction MW/MWG/MWB	Anti-bacterial/Anti-mold MWS	Heat Resistant /High Speed KV180	Heat Resistant /High Speed KV250	Super Corrosion Resistant SY	Corrosion Resistant Y	Acid Resistant AR	Electro-conductive Resistant E	Static Resistant SE	High Friction HF	Ultraviolet Resistant UVR
TOP CHAIN	TTP	•	•	•	•	•		•	•	•	•	•	•	•
	TTP-P	•	•	•	•			•	•	•	•	•	•	•
	TP-I	•		•	•			•	•	•	•	•		
	TP-II	•		•	•	•	•	•	•	•	•	•		
	TP826P-II	•	☎	•	•			•	•	•	•	•	•	•
	TN	•		•				•			•	•		•
	TN-NP	•		•				•			•	•		•
	TN-NP-LAMBDA	•		•				•			•	•		•
	TN-SS	•		•				•	•	•	•	•		•
	TN-PC	•		•				•			•	•		•
	TTUP	•	•	•	•	•			•	•	•	•	•	•
	TTUP826P, 1143P	•	☎	•	•			•	•	•	•	•	•	•
	TPU826	•	•	•	•	•	•		•	•	•	•	•	•
	TPU826-P	•	☎	•	•				•		•	•	•	•
	TNU	•		•				•			•	•		•
	TNU-NP	•		•				•			•	•		•
	TNU-AS	•		•				•	•	•	•	•		•
RS PLASTIC	RS35P, RS40P, RS50P, RS60P	•	•	•	•	•	☎	•	•	•	•	•	•	•
	RSP40P, 60P	•		•	•				•		•	•	•	•
	RS60P-2	•	•	•	•			•	•	•	•	•	•	•
	RS60PU	•	•	•	•			•	•	•	•	•	•	•
	RS60PU-2	•	•	•	•			•	•	•	•	•	•	•
	RS2040-P	•	•	•	•			•	•	•	•	•	•	
CLIP-TOP	Clip-Top Chain (CT)	•						•	•	•	•	•	•	
	CT-NP	•						•	•	•	•	•	•	
	CT-LAMBDA	•						•	•	•	•	•	•	
POLY-STEEL	RF25PC	•		•				•	•	•	•	•		•
	RF35PC	•		•				•	•	•	•	•		•
	RF40PC	•		•	•			•	•	•	•	•		•
	RF50PC	•		•	•			•	•	•	•	•		•
	RF60PC	•		•	•			•	•	•	•	•		•
RT	Roller Table	•						•	•	•	•	•		

• = Available

☎ = Call U.S. Tsubaki for availability

Roller Table Chain

RS Plastic Chain

Poly-Steel Chain

Clip-Top Chain

Top Chain



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