

**HYDEX 4101 &  
HYDEX 4101L**  
(Internally Lubricated)

The next revolution in Stock Shape  
Plastics has just arrived...

Introducing HYDEX 4101L  
internally lubricated PBT.

**HYDE**

A. L. HYDE COMPANY

# **HYDEX 4101 and 4101L**

**A Family of Stock Shape Plastics with Elevated Performance over PET-P, Acetal and Nylon.**

*In Direct Comparison to other Commonly Used Plastics, HYDEX 4101 and 4101L have:*

## **Improved Wear and Chemical Resistance Versus Acetal**

- HYDEX 4101 and 4101L are compatible with chemicals having a pH range of 2.0 - 9.0, acetal's range is 4.0 - 9.0.
- Hydex 4101 and 4101L can withstand repeated "CIP" chemical washdown without affecting material performance. Acetal degrades upon repeated contact with aqueous chlorine solutions.
- HYDEX 4101L has 30% higher limiting PV than Delrin AF.
- HYDEX 4101L has about two times better wear factor than acetal.
- HYDEX 4101L is approved for direct food contact, Delrin AF is not.

## **Superior Dimensional Stability over Nylon**

- HYDEX 4101 and 4101L have moisture absorption of 0.07%.
- Nylon has moisture absorption 15 times greater than Hydex, and can exhibit significant dimensional changes in use.

## **Best Wear and Lubricity when Compared to PET-P**

- HYDEX 4101 has 20% greater impact strength than PET-P.
- HYDEX 4101L has 20% greater impact strength than PET-P.
- HYDEX 4101L has about 50% better wear factor than PET-P.
- HYDEX 4101L has more than twice the LPV performance than PET-P.
- HYDEX 4101L has about 50% lower coefficient of friction than PET-P.

## ***HYDEX 4101 is a PBT Polyester***

with an outstanding set of properties including: wear resistance, chemical resistance and toughness.

## ***HYDEX 4101L (Lubricated)***

is an enhanced version with improved wear, PV range and lubricity over HYDEX 4101.

## **HYDEX 4101 & HYDEX 4101L - Physical Properties\***

Test	Test Method	Units	Hydex 4101	Hydex 4101L	PET-P	Acetal	Delrin 100AF ***
Specific Gravity	ASTM D792		1.31	1.36	1.39	1.42	1.50
Tensile Strength	ASTM D638	psi	9,400	7,200	12,100	11,400	7,500
Tensile Modulus	ASTM D638	psi	425,000	380,000	479,000	450,000	392,000
Tensile Elongation	ASTM D638	%	50	40	50	50	20
Flexural Modulus	ASTM D790	psi	420,000	390,000	512,000	462,000	347,000
Notched Izod Impact	ASTM D256	ft-lb/in	0.7	0.7	0.6	1.5	0.8
Heat Deflection Temp. @ 264 psi	ASTM D648	°F	200	195	205	280	265
Max Continuous Use Temperature	UL746B	°F	221	221	212	185	185
Wear Factor @ 2000 PV	LNP EPALP-TB001	in <sup>5</sup> -min / ft-lb-hr	210	38	67**	65	20
Dynamic Coefficient of Friction (Steel)	LNP EPALP-TB001		0.25	0.11	0.20	0.21	0.16
Static Coefficient of Friction (Steel)	LNP EPALP-TB001		0.19	0.08	0.18	0.14	0.10
LPV @ 100 fpm	LNP-EPALP-TB003	psi-fpm	6,000	15,700	5,000	3,500	12,400
Water Absorption (24 hours)	ASTM D570	%	0.07	0.07	0.07	0.22	0.20
FDA Compliant			Yes	Yes	Yes	Yes	No
3A Compliant			Yes	Yes	Yes	Yes	No
USDA Compliant			Yes	Yes	Yes	Yes	No

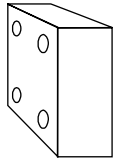
\* Typical physical property data generated from extruded-machined test specimens.

\*\* Reference Polymer Corp. Ertalyte PET-P publication 11/93

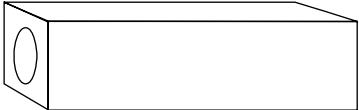
\*\*\* Blended with Delrin 150SA to yield 14% PTFE in finished product.

# Typical Applications for HYDEX 4101 & 4101L in Food Processing Equipment

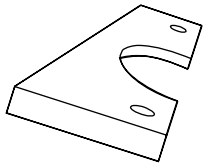
## *Liquid Product Filler*



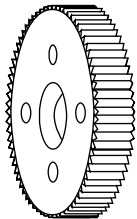
**FIXTURE BLOCK FOR  
PISTON ASSEMBLY**  
MATERIAL: HYDEX 4101



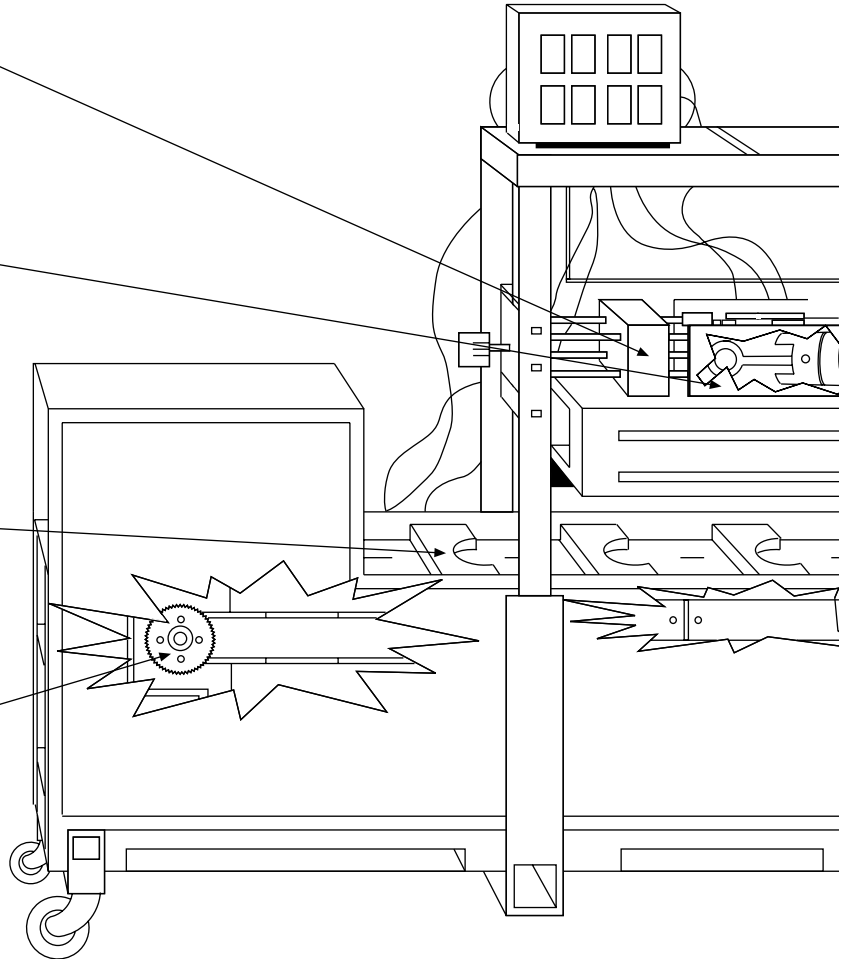
**FOOD PISTON VALVE BODY**  
MATERIAL: HYDEX 4101



**POSITIONING BLOCK**  
MATERIAL: HYDEX 202



**CONVEYOR GEAR**  
MATERIAL: HYDEX 4101



### **HYDEX 4101 and HYDEX 4101L give you the ability to:**

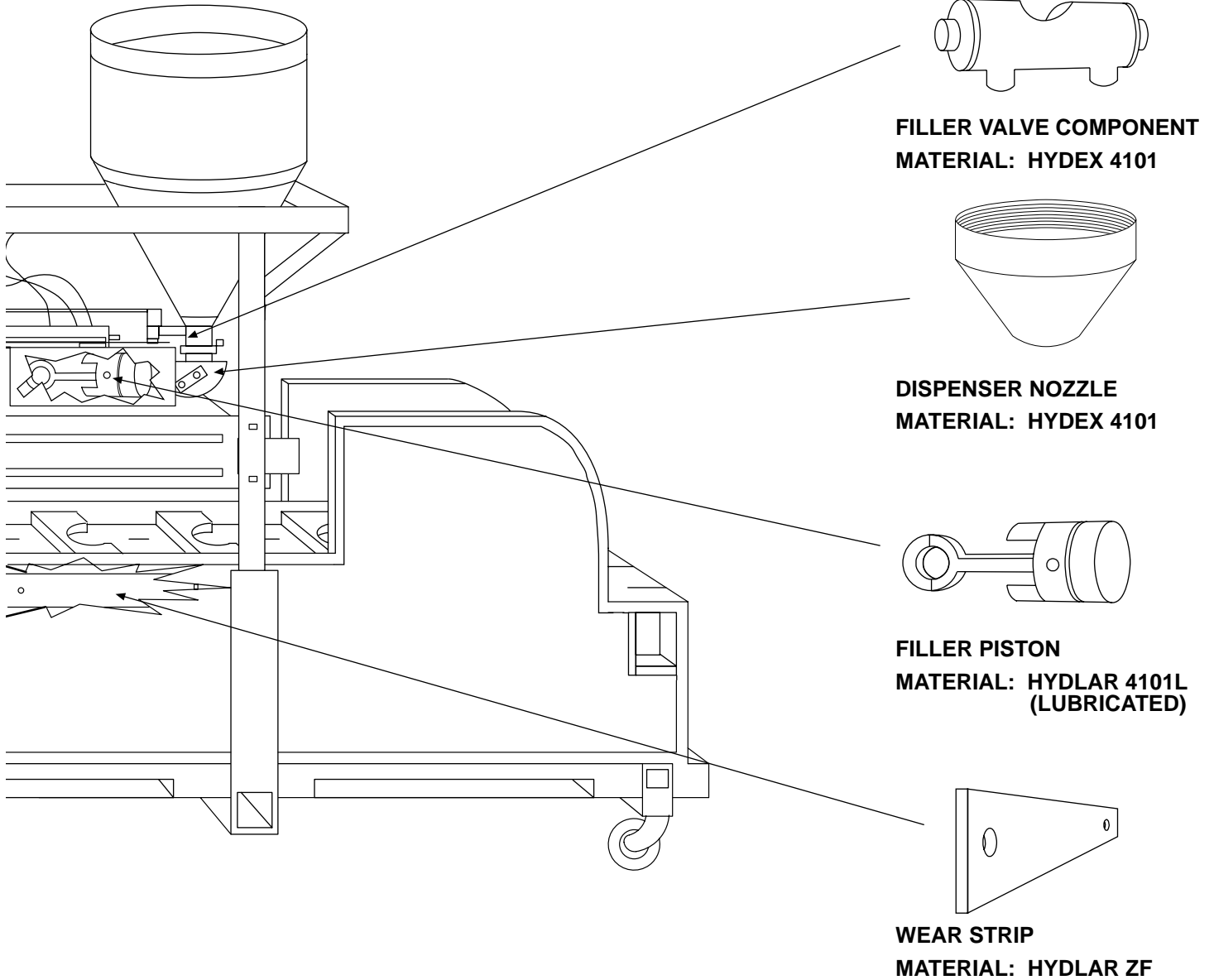
- **IMPROVE PRODUCTIVITY** - through increased line speeds due to high PV capabilities and low wear rate.
- **REDUCE DOWNTIME** - better wear rates mean less maintenance downtime to replace worn out parts.
- **LOWER COSTS** - through reduction or elimination of external lubricants and through using less replacement parts.

### **HYDEX 4101 and HYDEX 4101L can be used as components in many segments of the food processing industry:**

- |                             |                               |
|-----------------------------|-------------------------------|
| ▪ Beverages/<br>Soft Drinks | ▪ Meat and Meat<br>Byproducts |
| ▪ Dairy                     | ▪ Poultry Processing          |
| ▪ Ice Cream                 | ▪ Canned Foods                |
| ▪ Bakery Goods              | ▪ Frozen Foods                |
| ▪ Snack Foods               | ▪ Candy/Confectionery         |
| ▪ Juices                    | ▪ Processed Foods             |

# Typical Applications for HYDEX 4101 & 4101L in Food Processing Equipment

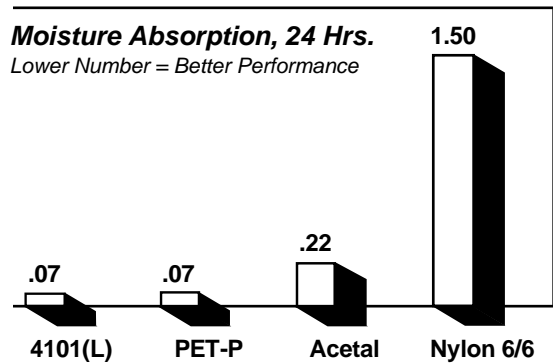
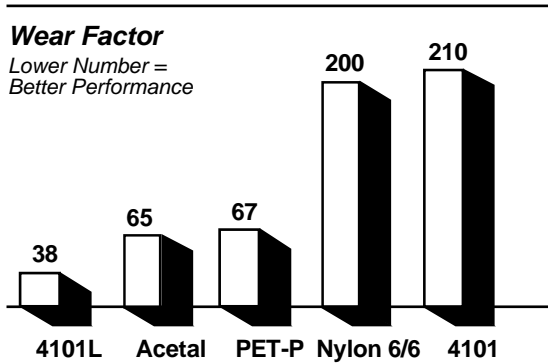
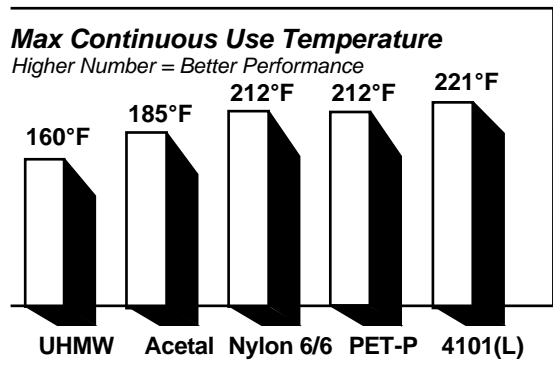
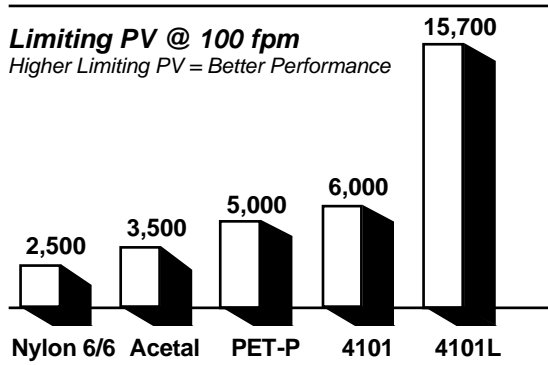
## *Liquid Product Filler*



### **HYDEX 4101 and HYDEX 4101L are used in applications such as:**

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>▪ Impellers</li> <li>▪ Cams</li> <li>▪ Cam Rollers</li> <li>▪ Bushings</li> <li>▪ Bearings</li> <li>▪ Gears</li> <li>▪ Pump Parts</li> <li>▪ Food Pistons</li> <li>▪ Wear Strips</li> </ul> | <ul style="list-style-type: none"> <li>▪ Dispensing Components</li> <li>▪ Filler Components</li> <li>▪ Timing Screws</li> <li>▪ Scraper Blades</li> <li>▪ Fixturing Blocks</li> <li>▪ Valve Bodies</li> <li>▪ Manifolds</li> <li>▪ Conveyor Wheels</li> <li>▪ Conveyor Components</li> </ul> |
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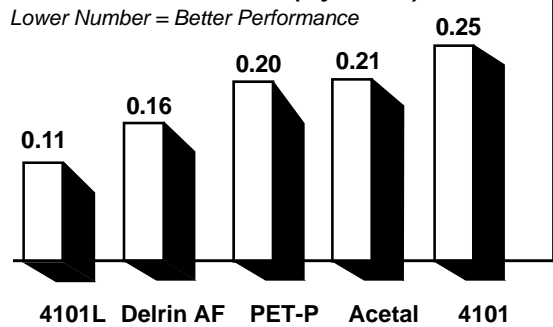
# Property Comparisons:



## Chemical Resistance

HYDEX 4101 HYDEX 4101L	> pH Range	2.0 - 9.0
PET-P	> pH Range	2.0 - 9.0
Acetal	> pH Range	4.0 - 9.0
Nylon 6/6	> pH Range	4.0 - 10.0

## Coefficient of Friction (Dynamic)



## HYDEX 4101 & 4101L = Improved Profits

We believe this information is the best currently available on the subject. It is subject to revision as additional knowledge and experience are gained. A.L. Hyde Company makes no guarantee of results and assumes no obligation of liability whatsoever in connection with this information. Anyone intending to use recommendations contained in this publication should first satisfy himself that the recommendations are suitable for his use and meet all appropriate safety and health standards. This publication is not a license to operate under, or intended to suggest infringement of any existing patents. References to products not of A.L. Hyde manufacture do not indicate endorsement of named products or unsuitability of other similar products.

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