



LAB LIQUID PUMPS METER, DOSE, TRANSFER



METERING, DOSING, AND
TRANSFERRING LIQUIDS.
PRECISE, SAFE AND CLEAN HANDLING
OF NEUTRAL AND AGGRESSIVE LIQUIDS.

LIQUID PUMPS FOR THE LABORATORY

KNF liquid diaphragm pumps are small, quiet, self-priming, maintenance-free, and will operate dry indefinitely without damage. Each includes intuitive control options and a splash-proof housing. Unlike peristaltic pumps, there is no tubing to break or fatigue, therefore flow rates are consistent, and reliable. In addition, all KNF liquid pumps offer premium, chemically-resistant models.

The KNF line of liquid diaphragm pumps includes:

- **SIMDOS® 02 and 10** metering and dosing pumps, offering metering flow rates from 0.03 – 20 mL/min and 1 – 100 mL/min, respectively, and discrete dosing volumes of 0.03 – 999 mL and 1 – 999 mL, respectively. See pages 3 – 6.
- **LIQUIPORT®** easy-to-use transfer pumps, with flow rates ranging from 0.2 – 1.3 L/min and 0.5 – 3.0 L/min. See pages 7 – 8.

Diaphragm liquid pumps are ideal for: applications that require low shear force, high repeatability and the ability to handle aggressive media.

Fields of Applications:

- Chemistry
- Synthetic organic chemistry
- Pharmacy
- Adhesives and glue
- Polymers & polymer coating
- Food technology research
- Detergents
- Water treatment research
- Biology, microbiology
- Biotechnology
- Fragrances

SIMDOS® 02

FINE METERING AND DOSING LIQUID PUMP



- Simple and intuitive operation
- Easy calibration
- Cycle mode
- Adaptable to fluid characteristics
- Self priming, can run dry
- Various control options
- Splashproof IP65, small footprint

FIELDS OF APPLICATION

- Chemistry
- Synthetic organic chemistry
- Pharmaceutical
- Adhesives and glue
- Polymers & polymer coating
- Food technology research
- Detergents

HYDRAULIC DATA

| Metering flow rate | Dosing volume | Suction height | Max. pressure |
|--------------------|------------------|----------------|---------------|
| 0.03 – 20 mL/min | 0.03 mL – 999 mL | 6.6 ft. water | 85 psig |

PUMP TYPE

| Code | Pump head | Diaphragm | Valves | Filter (1pc. included) | Tubing (2pc. included) |
|------|-----------------|--------------|----------------|------------------------|------------------------|
| KT | PP | PTFE covered | FFKM Kalrez® | 165212 | 166329 |
| TT | PVDF | PTFE covered | FFKM Kalrez® | 165210 | 166329 |
| FT | PTFE | PTFE covered | FFKM Kalrez® * | 165212 | 166329 |
| ST | STAINLESS STEEL | PTFE covered | FFKM Kalrez® | 165212 | 166329 |

* On request FFKM Chemraz®

CONTROL TYPE

| S - Version | RC - Version | RC Plus - Version |
|--|---|--|
| <ul style="list-style-type: none"> ■ Manual operation | <ul style="list-style-type: none"> ■ Manual operation ■ Analog control: 0 – 5 V, 0 – 10 V, 0 – 20 mA, 4 – 20 mA, from 1 to 100% ■ Start/Stop through logic control (TTL) | <ul style="list-style-type: none"> ■ Reset/Prime through logic control (TTL) ■ Output signal fault alarm ■ RC cable for external control included ■ Same as RC ■ RS 232 port for PC control ■ RS 232 cable with D-Sub 9 connector included |

TECHNICAL DATA

- Main supply 100 – 240 V / 50 – 60 Hz
- Ambient temperature allowed +5 to +40 °C
- Liquid temperature allowed +5 to +80 °C
- Viscosity settings up to 500 cSt**
- Accuracy +/-2% (nominal value)
- Repeatability +/-1%
- Power consumption 10 W
- Protection class IP65
- Dimensions: 150 H x 93 W x 144 D mm
- Weight: 0.9 kg
- UNF 1/4" – 28 threaded ports
- Supplied with 1/8" OD x 1/16" ID tubing; other options available
- Filter

** Reduced flow rate above 150 cSt

Model Numbers: FEM 1.02___.18__ Example: FEM 1.02KT.18RCP

Code: KT, TT, FT, or ST

Control: S, RC, or RCP

See page 9 for a list of all model numbers.

ACCESSORIES

| VALVES KIT | |
|---|--------|
| | ID-Nr. |
| FFKM Chemraz® special valves for certain chemicals | 164984 |



Special Valves CHEMRAZ®

| DIAPHRAGM PRESSURE CONTROL VALVE WITH SUPPORT (when the feeding tank is above the pump or to dose into vacuum) | |
|---|--------|
| | ID-Nr. |
| Kit JFDV 30 KTZ for SIMDOS® 02 KT | 166286 |
| Kit JFDV 30 TTZ for SIMDOS® 02 TT | 166287 |
| Kit JFDV 30 FTZ for SIMDOS® 02 FT | 166288 |



| FILTER (for protection against influent particulates and fibers) | | | | |
|--|----------|----------|-------------|--------|
| Type | Porosity | Material | Connector | ID-Nr. |
| FS 60 T | 70 µm | PVDF | UNF 1/4"-28 | 165210 |
| FS 60 X | 35 µm | PEEK | UNF 1/4"-28 | 165212 |



| TUBING AND CONNECTORS | |
|---|--------|
| | ID-Nr. |
| Replacement FEP inlet/outlet tubing , 1/8" OD x 1/16" ID x 1 m with UNF 1/4"-28 connector | 166329 |
| Also available in 2 m length | 166330 |
| Replacement UNF 1/4"-28 connector set for 1/8" OD tubing (includes 2 ferrules and 2 fittings) | 069790 |
| Optional FEP outlet tubing for fine dosing, 1/16" OD x 1/32" ID x 1 m with UNF 1/4"-28 connector† | 166335 |



† 5 mL/min maximum flow rate with this tubing.

| MOUNTING PLATE | |
|-------------------|--------|
| | ID-Nr. |
| For wall mounting | 160473 |



| STANDFITTING | |
|------------------|--------|
| | ID-Nr. |
| For retort stand | 160474 |



| USB-SERIAL CONVERTER (for SIMDOS® RC Plus) | |
|--|--------|
| | ID-Nr. |
| | 166949 |



| FOOTSWITCH | |
|----------------------------|--------|
| | ID-Nr. |
| For impulse start and stop | 155872 |



SIMDOS® 10

METERING AND DOSING LIQUID PUMP



- Simple and intuitive operation
- Easy calibration
- Cycle mode
- Adaptable to fluid characteristics
- Self priming, can run dry
- Various control options
- Splashproof IP65, small footprint

FIELDS OF APPLICATION

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ Chemistry ■ Synthetic organic chemistry ■ Pharmaceutical ■ Adhesives and glue | <ul style="list-style-type: none"> ■ Polymers & polymer coating ■ Food technology research ■ Detergents |
|--|--|

HYDRAULIC DATA

| Metering flow rate | Dosing volume | Suction height | Max. pressure |
|--------------------|---------------|----------------|---------------|
| 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig |

PUMP TYPE

| Code | Pump head | Diaphragm | Valves | Filter (1pc. included) | Tubing (2pc. included) |
|------|-----------------|--------------|----------------|------------------------|------------------------|
| KT | PP | PTFE covered | FFKM Kalrez® | 165213 | 160269 |
| TT | PVDF | PTFE covered | FFKM Kalrez® | 165211 | 160269 |
| FT | PTFE | PTFE covered | FFKM Kalrez® * | 165213 | 160271 |
| ST | STAINLESS STEEL | PTFE covered | FFKM Kalrez® | 165213 | 160271 |

* On request FFKM Chemraz®

CONTROL TYPE

| S2 - Version | RC2 - Version | RC Plus 2 - Version |
|--|---|---|
| <ul style="list-style-type: none"> ■ Manual operation | <ul style="list-style-type: none"> ■ Manual operation ■ Analog control: 0 – 5 V, 0 – 10 V, 0 – 20 mA, 4 – 20 mA, from 1 to 100% ■ Start/Stop through logic control (TTL) | <ul style="list-style-type: none"> ■ Reset/Prime through logic control (TTL) ■ Output signal fault alarm ■ RC cable for external control included ■ Same as RC2 ■ RS 232 port for PC control ■ RS 232 cable with D-Sub 9 connector included |

TECHNICAL DATA

- | | |
|--|---|
| <ul style="list-style-type: none"> ■ Main supply 100 – 240 V / 50 – 60 Hz ■ Allowed ambient temperature +5 to +40 °C ■ Allowed liquid temperature +5 to +80 °C ■ Viscosity settings up to 500 cSt** ■ Accuracy +/-2% (nominal value) ■ Repeatability +/-1% | <ul style="list-style-type: none"> ■ Power consumption 24 W ■ Protection class IP65 ■ Dimensions: 150 H x 93 W x 144 D mm ■ Weight: 0.9 kg ■ Supplied with 1/4" OD x 1/8" ID x 2 M tubing and compression fittings ■ Filter |
|--|---|

** Reduced flow rate above 150 cSt

Model Numbers: UFEM 1.10__ .18__ Example: UFEM 1.10TT.18RC2

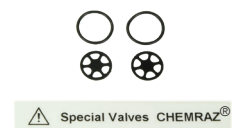
Code: KT, TT, FT, or ST _____

Control: S2, RC2, or RCP2 _____

See page 9 for a list of all model numbers.

ACCESSORIES

| VALVES KIT | |
|---|--------|
| | ID-Nr. |
| FFKM Chemraz® special valves for certain chemicals | 168037 |



| DIAPHRAGM PRESSURE CONTROL VALVE WITH SUPPORT (when the feeding tank is above the pump or to dose into vacuum) | |
|---|--------|
| | ID-Nr. |
| Kit UFDV 30 KTZ for SIMDOS® 10 KT | 167598 |
| Kit UFDV 30 TTZ for SIMDOS® 10 TT | 167599 |
| Kit UFDV 30 FTZ for SIMDOS® 10 FT, ST | 167600 |



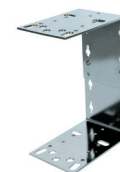
| FILTER | | | | | |
|---------|----------|----------|------------------------------|------------|--------|
| Type | Porosity | Material | Connector | FOR | ID-Nr. |
| FS 25 T | 70 µm | PVDF | for 1/4" OD x 1/8" ID tubing | TT | 165211 |
| FS 25 X | 35 µm | PEEK | for 1/4" OD x 1/8" ID tubing | FT, KT, ST | 165213 |



| PULSATION DAMPER (placed on pump outlet for smoother flow) | |
|--|--------|
| | ID-Nr. |
| UFPD 10 KT for SIMDOS® 10 KT | 167821 |
| UFPD 10 TT for SIMDOS® 10 TT | 167822 |
| UFPD 10 FT for SIMDOS® 10 FT, ST | 167823 |



| MOUNTING PLATE | |
|-------------------|--------|
| | ID-Nr. |
| For wall mounting | 160473 |



| STANDFITTING | |
|------------------|--------|
| | ID-Nr. |
| For retort stand | 160474 |



| USB-SERIAL CONVERTER (for SIMDOS® RC Plus 2) | |
|--|--------|
| | ID-Nr. |
| | 166949 |

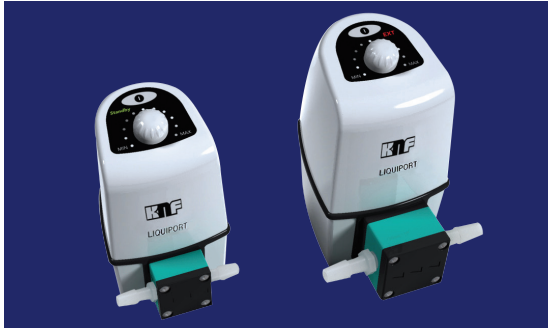


| FOOTSWITCH | |
|----------------------------|--------|
| | ID-Nr. |
| For impulse start and stop | 155872 |



LIQUIPORT® 100, 1.100, 300, 1.300

LIQUID TRANSFER PUMP



- Simple and intuitive operation
- Self priming, can run dry
- Analog and impulse control (RC)
- Splashproof IP65, small footprint

FIELDS OF APPLICATION

- Chemistry
- Synthetic organic chemistry
- Pharmaceutical
- Adhesives and glue
- Polymers & polymer coating
- Food technology research
- Detergents

HYDRAULIC DATA

| Type | Flow rate | Suction height | Max. pressure |
|-----------------|-----------------|----------------|---------------|
| LIQUIPORT 100 | 0.2 – 1.3 L/min | 9.8 ft. water | 15 psig |
| LIQUIPORT 1.100 | 0.2 – 1.3 L/min | 9.8 ft. water | 85 psig |
| LIQUIPORT 300 | 0.5 – 3.0 L/min | 9.8 ft. water | 15 psig |
| LIQUIPORT 1.300 | 0.5 – 3.0 L/min | 9.8 ft. water | 85 psig |

PUMP TYPE

| Code | Pump head | Diaphragm | Valves |
|------|-----------|--------------|----------------|
| KT | PP | PTFE covered | FFKM Simriz® * |
| TT | PVDF | PTFE covered | FFKM Simriz® * |
| FT | PTFE | PTFE covered | FFKM Simriz® * |

* Optional materials available on request

CONTROL TYPE

| S - Version | RC - Version |
|--|---|
| <ul style="list-style-type: none"> ■ Manual operation | <ul style="list-style-type: none"> ■ Manual operation ■ Analog control: 0 – 10 V for 0 to 100% (others on request) ■ Start/Stop through logic control (TTL) ■ Output signal fault alarm ■ RC cable for external control included |

TECHNICAL DATA

- Main supply 100 – 240 V / 50 – 60 Hz
- Ambient temperature allowed +5 to +40 °C
- Liquid temperature allowed +5 to +80 °C
- Maximum viscosity allowed 150 cSt
- Power consumption 12 – 16 W (100, 1.100); 22 – 32 W (300, 1.300)
- Repeatability +/-1%
- Protection class IP65
- Dimensions:
 - 130 H x 99 W x 177 D mm (100, 1.100)
 - 160 H x 104 W x 188 D mm (300, 1.300)
- Weight: 1.0 kg (100, 1.100); 1.5 kg (300, 1.300)
- Equipped with barbed fittings:
 - for 5/16" ID tubing (100, 1.100)
 - for 15/32" ID tubing (300, 1.300)

Model Numbers: NF _____ .18 _____ Example: NF 1.300FT.18S

Type: 100, 1.100, 300, 1.300

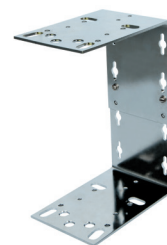
Code: KT, TT, or FT

Control: S, or RC

See page 10 for a list of all model numbers.

ACCESSORIES

| MOUNTING PLATE | |
|-------------------|--------|
| | ID-Nr. |
| For wall mounting | 160473 |



| STANDFITTING | |
|------------------|--------|
| | ID-Nr. |
| For retort stand | 160474 |



| FOOTSWITCH | |
|----------------------------|--------|
| | ID-Nr. |
| For impulse start and stop | 155872 |



PRODUCT LISTINGS AND SPECIFICATIONS

| Model | Specifications | | | | Materials of Construction | | | Control |
|--------------------|------------------|---------------|----------------|----------|---------------------------|-----------|-------------------|---------|
| | Metering | Dosing | Suction Height | Pressure | Head | Diaphragm | Valves | |
| SIMDOS® 02 | | | | | | | | |
| FEM 1.02KT.18S | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PP | PTFE | FFKM ¹ | S |
| FEM 1.02TT.18S | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PVDF | PTFE | FFKM ¹ | S |
| FEM 1.02FT.18S | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PTFE | PTFE | FFKM ¹ | S |
| FEM 1.02ST.18S | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | SS | PTFE | FFKM ¹ | S |
| FEM 1.02KT.18RC | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PP | PTFE | FFKM ¹ | RC |
| FEM 1.02TT.18RC | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PVDF | PTFE | FFKM ¹ | RC |
| FEM 1.02FT.18RC | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PTFE | PTFE | FFKM ¹ | RC |
| FEM 1.02ST.18RC | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | SS | PTFE | FFKM ¹ | RC |
| FEM 1.02KT.18RCP | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PP | PTFE | FFKM ¹ | RCP |
| FEM 1.02TT.18RCP | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PVDF | PTFE | FFKM ¹ | RCP |
| FEM 1.02FT.18RCP | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | PTFE | PTFE | FFKM ¹ | RCP |
| FEM 1.02ST.18RCP | 0.03 – 20 mL/min | 0.03 – 999 mL | 6.6 ft. water | 85 psig | SS | PTFE | FFKM ¹ | RCP |
| SIMDOS® 10 | | | | | | | | |
| UFEM 1.10KT.18S2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PP | PTFE | FFKM ¹ | S |
| UFEM 1.10TT.18S2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PVDF | PTFE | FFKM ¹ | S |
| UFEM 1.10FT.18S2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PTFE | PTFE | FFKM ¹ | S |
| UFEM 1.10ST.18S2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | SS | PTFE | FFKM ¹ | S |
| UFEM 1.10KT.18RC2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PP | PTFE | FFKM ¹ | RC |
| UFEM 1.10TT.18RC2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PVDF | PTFE | FFKM ¹ | RC |
| UFEM 1.10FT.18RC2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PTFE | PTFE | FFKM ¹ | RC |
| UFEM 1.10ST.18RC2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | SS | PTFE | FFKM ¹ | RC |
| UFEM 1.10KT.18RCP2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PP | PTFE | FFKM ¹ | RCP |
| UFEM 1.10TT.18RCP2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PVDF | PTFE | FFKM ¹ | RCP |
| UFEM 1.10FT.18RCP2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | PTFE | PTFE | FFKM ¹ | RCP |
| UFEM 1.10ST.18RCP2 | 1 – 100 mL/min | 1 – 999 mL | 9.8 ft. water | 85 psig | SS | PTFE | FFKM ¹ | RCP |

For more information, see pages 3 – 4 for SIMDOS® 02 and pages 5 – 6 for SIMDOS® 10.

| Model | Specifications | | | Materials of Construction | | | Control |
|-------------------|-----------------|----------------|----------|---------------------------|-----------|-------------------|---------|
| | Transfer | Suction Height | Pressure | Head | Diaphragm | Valves | |
| LIQUIPORT® | | | | | | | |
| NF 100KT.18S | 0.2 – 1.3 L/min | 9.8 ft. water | 15 psig | PP | PTFE | FFKM ² | S |
| NF 100TT.18S | 0.2 – 1.3 L/min | 9.8 ft. water | 15 psig | PVDF | PTFE | FFKM ² | S |
| NF 100FT.18S | 0.2 – 1.3 L/min | 9.8 ft. water | 15 psig | PTFE | PTFE | FFKM ² | S |
| NF 1.100KT.18S | 0.2 – 1.3 L/min | 9.8 ft. water | 85 psig | PP | PTFE | FFKM ² | S |
| NF 1.100TT.18S | 0.2 – 1.3 L/min | 9.8 ft. water | 85 psig | PVDF | PTFE | FFKM ² | S |
| NF 1.100FT.18S | 0.2 – 1.3 L/min | 9.8 ft. water | 85 psig | PTFE | PTFE | FFKM ² | S |
| NF 300KT.18S | 0.5 – 3.0 L/min | 9.8 ft. water | 15 psig | PP | PTFE | FFKM ² | S |
| NF 300TT.18S | 0.5 – 3.0 L/min | 9.8 ft. water | 15 psig | PVDF | PTFE | FFKM ² | S |
| NF 300FT.18S | 0.5 – 3.0 L/min | 9.8 ft. water | 15 psig | PTFE | PTFE | FFKM ² | S |
| NF 1.300KT.18S | 0.5 – 3.0 L/min | 9.8 ft. water | 85 psig | PP | PTFE | FFKM ² | S |
| NF 1.300TT.18S | 0.5 – 3.0 L/min | 9.8 ft. water | 85 psig | PVDF | PTFE | FFKM ² | S |
| NF 1.300FT.18S | 0.5 – 3.0 L/min | 9.8 ft. water | 85 psig | PTFE | PTFE | FFKM ² | S |
| NF 100KT.18RC | 0.2 – 1.3 L/min | 9.8 ft. water | 15 psig | PP | PTFE | FFKM ² | RC |
| NF 100TT.18RC | 0.2 – 1.3 L/min | 9.8 ft. water | 15 psig | PVDF | PTFE | FFKM ² | RC |
| NF 100FT.18RC | 0.2 – 1.3 L/min | 9.8 ft. water | 15 psig | PTFE | PTFE | FFKM ² | RC |
| NF 1.100KT.18RC | 0.2 – 1.3 L/min | 9.8 ft. water | 85 psig | PP | PTFE | FFKM ² | RC |
| NF 1.100TT.18RC | 0.2 – 1.3 L/min | 9.8 ft. water | 85 psig | PVDF | PTFE | FFKM ² | RC |
| NF 1.100FT.18RC | 0.2 – 1.3 L/min | 9.8 ft. water | 85 psig | PTFE | PTFE | FFKM ² | RC |
| NF 300KT.18RC | 0.5 – 3.0 L/min | 9.8 ft. water | 15 psig | PP | PTFE | FFKM ² | RC |
| NF 300TT.18RC | 0.5 – 3.0 L/min | 9.8 ft. water | 15 psig | PVDF | PTFE | FFKM ² | RC |
| NF 300FT.18RC | 0.5 – 3.0 L/min | 9.8 ft. water | 15 psig | PTFE | PTFE | FFKM ² | RC |
| NF 1.300KT.18RC | 0.5 – 3.0 L/min | 9.8 ft. water | 85 psig | PP | PTFE | FFKM ² | RC |
| NF 1.300TT.18RC | 0.5 – 3.0 L/min | 9.8 ft. water | 85 psig | PVDF | PTFE | FFKM ² | RC |
| NF 1.300FT.18RC | 0.5 – 3.0 L/min | 9.8 ft. water | 85 psig | PTFE | PTFE | FFKM ² | RC |

For more information, see pages 7 – 8 for LIQUIPORT® pumps.

¹ FFKM Kalrez®

² FFKM Simriz®

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Kalrez® is a registered trademark of E. I. du Pont de Nemours and company or one of its subsidiaries.

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SIMDOS® is a registered trademark of KNF Flodos AG.

Simriz® is a registered trademark of Carl Freudenberg KG Corporation.

Tygon® is a registered trademark of Saint-Gobain.

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