

MixRite™ Water treatment



 **tefen**
Flow & Dosing Solutions

Keep your business flowing.
Tefenitely.

About Tefen

Tefen is a leading manufacturer of environmental friendly, non-electric volumetric equipment and flow products since 1973.

Tefen's MixRite proportioning dosing pumps, line, are used to ensure precise additive injection directly into the water or fluid line. For many reasons this is the right choice for you.

Applications

- Chlorination
- Sanitation
- Water Disinfection

MixRite™

The Tefen MixRite water powered dosing pump is user friendly and ingenious system that has demonstrated its value in over 90 countries.

Tefen is certified by ISO 9001 2015  

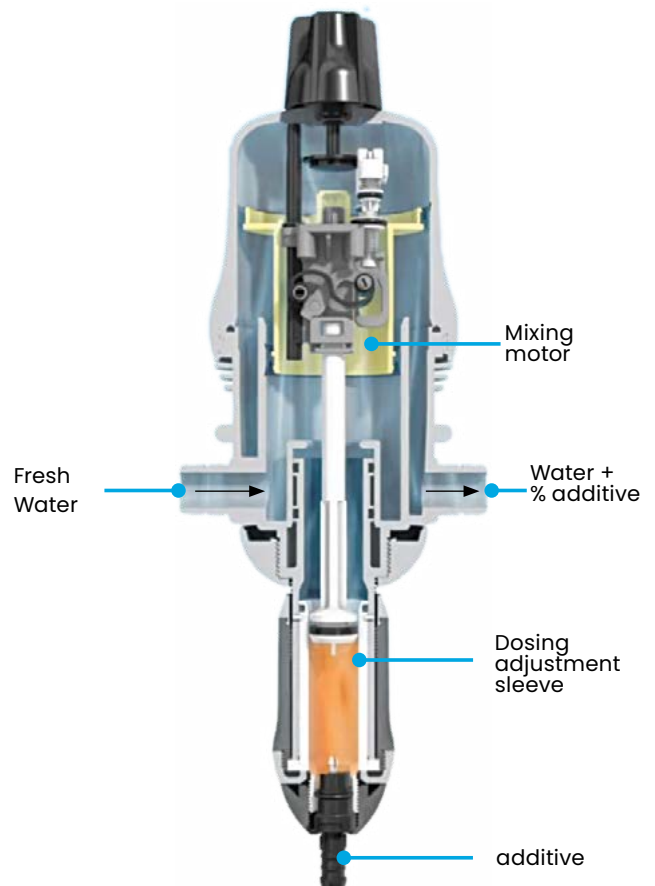


Advantages of using MixRite

- Hydraulic, volumetric and non-electric
- Dosing proportional to water flow rate
- Excellent dosing repeatability and homogeneity
- Easy dosing adjustment
- Easy to install, operate and maintain

Adjusting the MixRite pump

The injection rate is set up manually by rotating the sleeve to the desired proportion. The amount of injected concentrate is proportional to the amount of water flowing into the MixRite pump.



Chlorination for rural areas or emergencies:

- It is estimated that 2.6 billion people do not have satisfactory access to drinking water
- The production of drinking water in rural areas or emergencies requires reliable equipment that is suitable for extreme conditions such as lack of electricity or local constraints
- Typical concentration and dosing:
 - Sodium Hypochlorite: 0.3 – 5 PPM
 - Chlorine Dioxide: 0.3 – 5 PPM
 - Hydrogen Peroxide: 1 PPM and above
- All concentration and dosing levels refer to the water content.

PH Control

- For PH Control there is a wide range of acids that are being used, such as: Sulphoric acid, Chloric Acid, Phosphoric acid, Nitric Acid

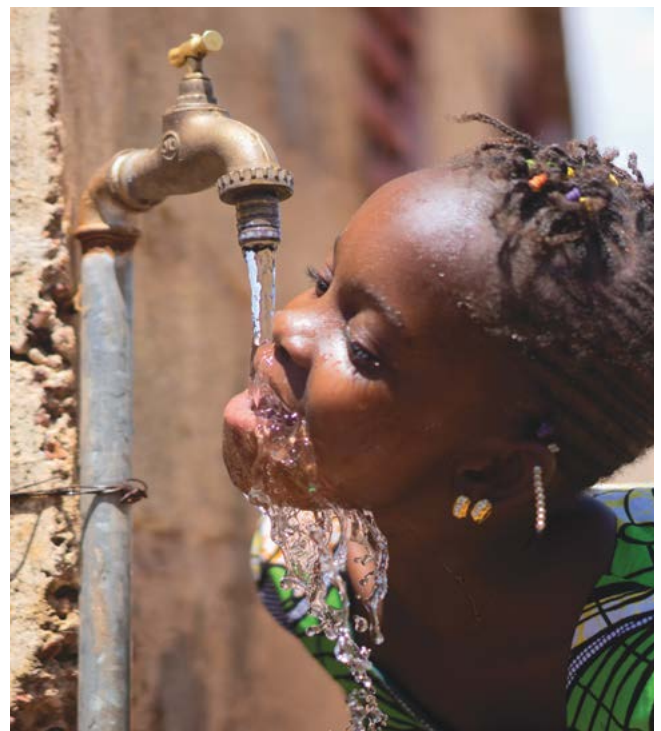


Sanitization and Disinfection

MixRite proportional dosing pumps are widely used for Sanitation and Disinfection of water lines.

Industries under this application:

- Food processing and sanitation
- Beer line cleaning
- Operating theaters – surface cleaning and disinfection
- Cleaning and Sanitary additives to be dosed and injected including glutaraldehyde and organic acids such as:
 - peracetic acid, formic acid, etc.
 - quadranary ammoniums, etc.



MixRite™ Dosing Pumps



MixRite™ 2.5 Series

Low Flow Rate
0.1-0.9% | 0.3-2% | 0.4-4%

| | |
|-----------------------|--------------------------------|
| Water pressure | 0.2 - 8 bar (2.9-120 psi) |
| Flow Rate | 10 - 2500 l/h (1.85-660 gal/h) |
| Weight | 1.8 kg (4 pound) |
| Coupling | 3/4" |



MixRite™ 3.5 Series

0.03-0.2% | 0.1-0.9% |
0.3-2% | 0.5-5% | 1-10%

| | |
|-----------------------|--------------------------------|
| Water pressure | 0.2 - 8 bar (2.9-120 psi) |
| Flow Rate | 10 - 3500 l/h (2.65-930 gal/h) |
| Weight | 1.8 kg (4 pounds) |
| Coupling | 3/4" |

* 1-10% - 3.6 kg



MixRite™ TF-5

0.1-1% | 0.2-2% | 0.5-5%

| | |
|-----------------------|---------------------------|
| Water pressure | 1 - 8 bar (14.7-120 psi) |
| Flow Rate | 0.1 - 5 m3/h (0.8-22 GPM) |
| Weight | 5 kg (11 pounds) |
| Coupling | 1" or 32 mm |

* Legs available upon special request



MixRite™ TF-10

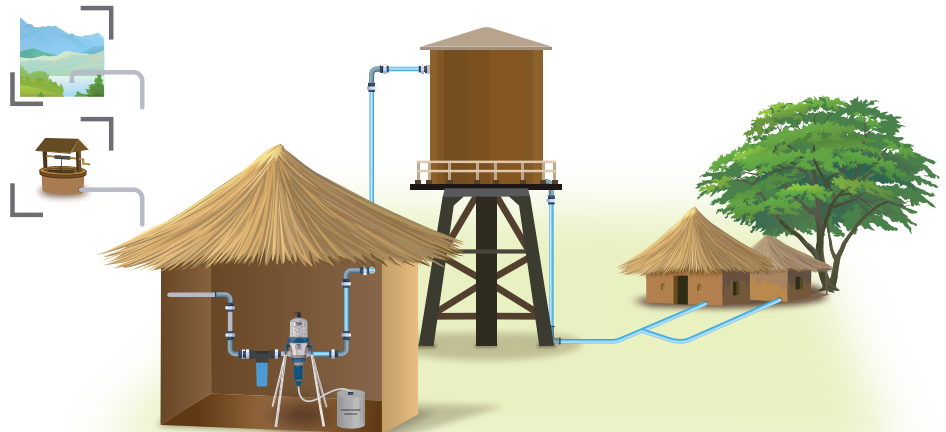
0.1-1% | 0.2-2% | 1-5%

| | |
|-----------------------|--------------------------|
| Water pressure | 1 - 8 bar (14.7-120 psi) |
| Flow Rate | 0.1 - 10 m3/h (2-45 GPM) |
| Weight | 7.3 kg (16.27 pounds) |
| Coupling | 1.5" or 50 mm |

* Legs available upon special request

| Spec type | Model | Flow rate Range | Dosage rate | Min-max injection Rate per Hour |
|-------------|----------------------------|--------------------------|----------------|---------------------------------|
| MIXRITE 1 | 0.1% - 1% | 20-1000 l/h | 1:1000 - 1:100 | 0.02 - 10 l/h |
| | 0.2% - 2% | 20-1000 l/h | 1:500 - 1:50 | 0.04 - 20 l/h |
| | 0.4% - 4% | 20-1000 l/h | 1:250 - 1:25 | 0.08 - 40 l/h |
| MIXRITE 2.5 | 0.1% - 0.9% | 10-2500 l/h | 1:1000 - 1:111 | 0.01 - 22.5 l/h |
| | 0.3% - 2% | 10-2500 l/h | 1:333 - 1:50 | 0.03 - 50 l/h |
| | 0.4% - 4% | 10-2500 l/h | 1:250 - 1:25 | 0.04 - 100 l/h |
| | 0.3% - 2% by-pass | 20-2500 l/h | 1:333 - 1:50 | 0.06 - 50 l/h |
| | 0.4% - 4% by-pass | 20-2500 l/h | 1:250 - 1:25 | 0.08 - 100 l/h |
| | 0.3% - 2% Internal by-pass | 20-2500 l/h | 1:333 - 1:50 | 0.06 - 50 l/h |
| | 0.4% - 4% Internal by-pass | 20-2500 l/h | 1:250 - 1:25 | 0.08 - 100 l/h |
| MIXRITE 3.5 | 0.03% - 0.2% | 10-3500 l/h | 1:3333 - 1:500 | 0.003 - 7 l/h |
| | 0.1% - 0.9% | 10-3500 l/h | 1:1000 - 1:111 | 0.01 - 31.5 l/h |
| | 0.3% - 2% | 10-3500 l/h | 1:333 - 1:50 | 0.03 - 70 l/h |
| | 0.5% - 5% | 10-3500 l/h | 1:200 - 1:20 | 0.05 - 175 l/h |
| | 1% - 10% | 50-3500 l/h | 1:100 - 1:10 | 0.5 - 350 l/h |
| | 1%-10% Internal by-pass | 50-3500 l/h | 1:100 - 1:10 | 0.5 - 350 l/h |
| TF-5 | 0.1 - 1% | 0.1-5 m ³ /h | 1:1000 - 1:100 | 0.1 - 50 l/h |
| | 0.2 - 2% | 0.1-5 m ³ /h | 1:500 - 1:50 | 0.2 - 100 l/h |
| | 0.5 - 5% | 0.1-5 m ³ /h | 1:200 - 1:20 | 0.5 - 250 l/h |
| TF-10 | 0.1 - 1% | 0.1-10 m ³ /h | 1:1000 - 1:100 | 0.1 - 100 l/h |
| | 0.2 - 2% | 0.1-10 m ³ /h | 1:500 - 1:50 | 0.2 - 200 l/h |
| | 1 - 5% | 0.1-10 m ³ /h | 1:100 - 1:20 | 1 - 500 l/h |

Drinking Water Purification



Watch Guard – Ultra Lean Dilution

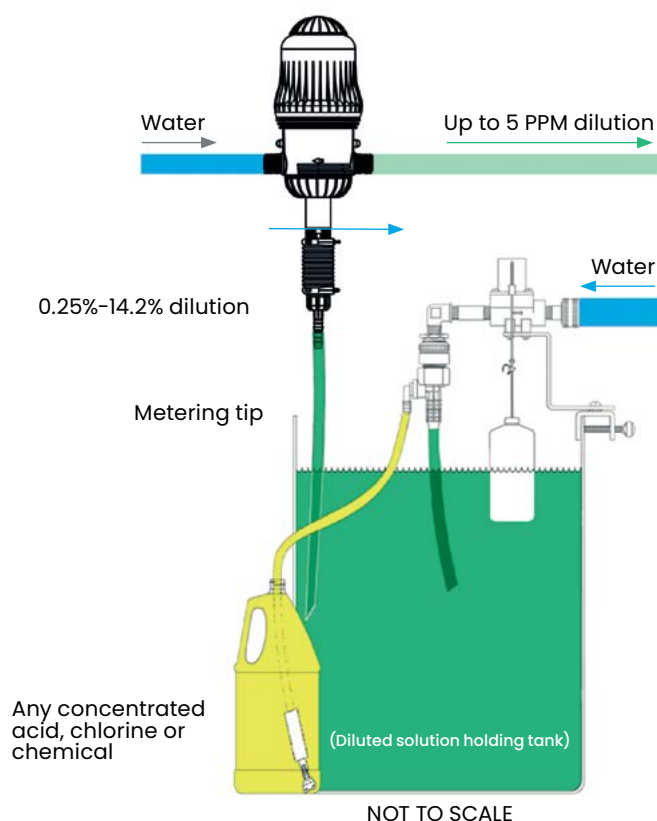
Watch Guard Reservoir Float System and MixRite™ Water Driven Injectors



Watch Guard is the premier reservoir float valve dilution system designed to deliver diluted solutions into any drum, tote or other reservoir. Attached to a standard water supply, Watch Guard automatically activates and keeps the reservoir filled ensuring a constant supply of diluted solution for the MixRite™ system.

- Achieve accurate ultra-lean dilution in 2 easy steps
- Effective with acid, chlorine and most any chemical
- Watch Guard is simple to mount on any drum, tote or other reservoir
- Automatically activates to keep reservoir full of diluted solution
- Metering tip included for dilutions from 0.25% to 14.2%
- Includes ASSE 1055B approved action gap backflow preventer
- MixRite™ attaches in-line to the water supply
- Delivers accurate proportioning regardless of water flow or pressure changes
- Multiple models available for injection rates from 1% to 10% and water flow from 227 – 25000 liter per hour

MixRite™ water driven injectors attach in-line to the water supply and use water pressure to accurately dilute solutions regardless of flow or pressure changes. When the Watch Guard is used in combination with any MixRite™, ultra-lean dilutions as low as 5 parts per million are achievable.



Induction Ratios for Viscosities Shown

| Metering Tip Color | 1 cps | 75 cps | 200 cps |
|--------------------|--------|--------|---------|
| Tan | %0.26 | %0.20 | %0.09 |
| Orange | %0.33 | %0.23 | %0.14 |
| Turquoise | %0.39 | %0.26 | %0.15 |
| Pink | %0.61 | %0.43 | %0.24 |
| Clear | %0.68 | %0.52 | %0.26 |
| Brown | %0.78 | %0.57 | %0.29 |
| Red | %1.08 | %0.71 | %0.35 |
| White | %1.19 | %0.78 | %0.38 |
| Green | %1.35 | %0.95 | %0.41 |
| Blue | %1.67 | %0.99 | %0.42 |
| Yellow | %2.38 | %1.33 | %0.44 |
| Black | %3.57 | %1.56 | %0.45 |
| Purple | %5.88 | %1.89 | %0.46 |
| Gray | %7.69 | %2.00 | %0.49 |
| No tip | %14.29 | %2.50 | %0.53 |

MixRite™ Dilution Ratios when combined with Watch Guard unit

| | | | | | | | | | | | |
|---|-----|-----------|-------|-----|------|------|--------|------------|-------|-------|--|
| What is the dilution ration you are trying to achieve | ppm | 5 | 8 | 16 | 22 | 33 | 154 | 286 | %0.2 | 1-500 | Set MixRite™ to the following ratio / percentage |
| | ppm | 8 | 12 | 23 | 32 | 50 | 231 | 429 | %0.3 | 1-333 | |
| | ppm | 13 | 20 | 39 | 54 | 83 | 385 | 714 | %0.5 | 1-200 | |
| | ppm | 50 | 31 | 61 | 84 | 130 | 601 | 1116 | %0.8 | 1-128 | |
| | ppm | 26 | 39 | 78 | 108 | 167 | 769 | 1429 | %1.0 | 1-100 | |
| | ppm | 32 | 49 | 98 | 134 | 208 | 962 | 1786 | %1.3 | 1-80 | |
| | ppm | 39 | 59 | 118 | 163 | 253 | 1166 | 2165 | %1.5 | 1-66 | |
| | ppm | 45 | 69 | 137 | 189 | 292 | 1350 | 2506 | %1.8 | 1-57 | |
| | ppm | 52 | 78 | 156 | 215 | 333 | 1538 | 2857 | %2.0 | 1-50 | |
| Use Watch Guard with corresponding tip | Tan | Turquoise | Brown | Red | Blue | Gray | No Tip | Percentage | Ratio | | |

Final Dilution with PPM is of the total chemical injected, not the active ingredient in chemical.
 For example, if chemical is 10% active ingredient and final dilution is 100 PPM, then active ingredient PPM is 10.

TreatRite – Water Treatment Line

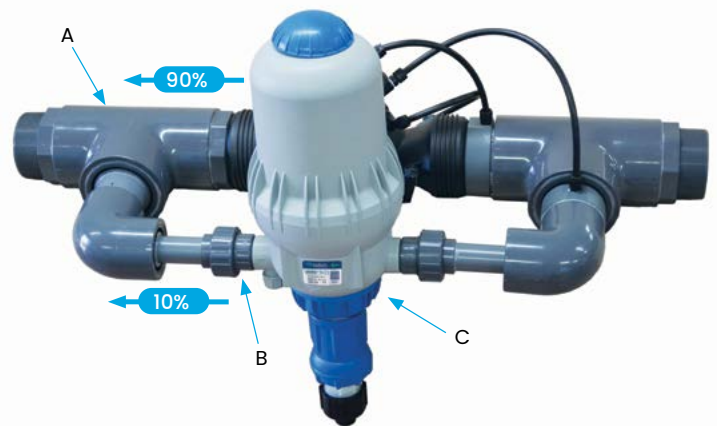
Proportional and Automatic Bypass System

The TreatRite™ system provides a proportional method between the mainline (A) and the sub-mainline (B), supported by a sophisticated innovative hydraulic system.

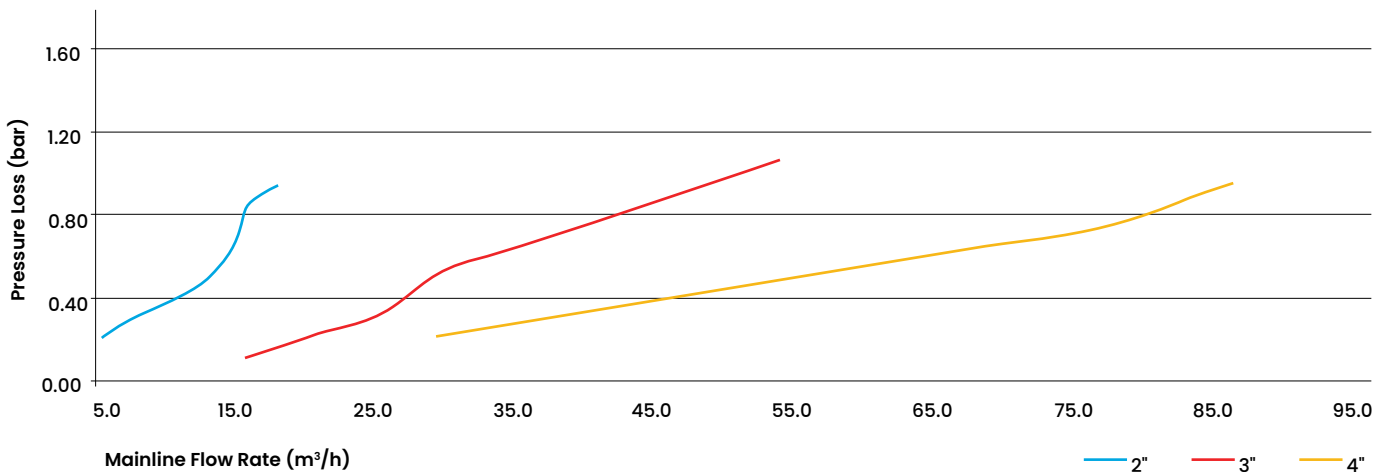
The MixRite™ pump is a volumetric, proportional unit. The combination between the MixRite™ Dosing Pump and the By-Pass unit creates a fully proportional dosing system.

This concept provides its user a perfect solution for water treatment. The end user of the TreatRite™ system can dose common additives for water treatment, such as: Sodium Hypochlorite, Chlorine Dioxide, and Hydrogen Peroxide.

The TreatRite™ system can be operated in various ranges as shown:



Pressure Loss VS. Flow Rate



| Flow Range m³/h | Dosage Range | | A | B | C |
|--------------------|--------------|----------|----|--------|------------------|
| | (%) | L/h | | | |
| 6-25 | 0.003-1 | 0.18-250 | 2" | 3/4" | MixRite™ 2.5/3.5 |
| 15-50 | 0.01-0.5 | 1.5-250 | 3" | 1" | MixRite™ TF-5 |
| 30-100 | 0.01-0.5 | 3-500 | 4" | 1 1/2" | MixRite™ TF-10 |

MixRite™ range:

2.5



3.5



TF-5



TF-10



Operating Principle:

- The pilot operating valve samples the pressure level at multiple points, and controls the opening condition of the diaphragm.
- This operation governs the flow rates to generate a stable 1:10 ratio between lines.

Case Study (Water Treatment)

- Total water flow rate: 67.3 m³/h
- Desired dosage rate: 0.1%
- Additive amount: 67.3 x 0.1% = 0.0673 m³/h
- Relevant configuration: 4", 1.5"
- Main line water flow: 67.3 x 0.9 = 60.57 m³/h
- By-Pass water flow: 67.3 x 0.1 = 6.73 m³/h
- Relevant injector: TF-10 0.2%-2%
- Dosage setting on injector: 0.0673 / 6.73 = 1%

Features and Benefits

- Keeps constant proportional flow rate
- Hydraulic, volumetric and non-electric
- Dosing proportional to flowrate
- Precision: surface quality optimized with no waste
- Flow rate between main line and sub-main line will remain 10:1 at wide flow rates
- Working pressure up to 8 bar (116 PSI)
- High UV resistance
- High chemical resistance
- Supplied pre - set. no need for calibration
- Excellent dosing repeatability and homogeneity
- Easy to install, operate and maintain, with no electricity risk

WATER TREATMENT

Water treatment is any process that improves the quality of water to make it more acceptable for a specific end-use. The end use may be drinking, industrial water supply, irrigation, river flow maintenance, water recreation or many other uses, including being safely returned to the environment.

As one of the world's leading suppliers of industrial piping products; Tefen Flow Products

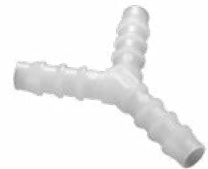
offers a comprehensive range of integrated solutions to meet the needs of water and wastewater facilities. Superior to the competition, the Tefen system consisting of Fittings, Valves, and Pipes ensures uniform performance throughout treatment facilities. Noncorroding properties ensure long-term performance coupled with low maintenance costs.



PVDF FITTINGS



For PVDF material only



WATER PRE-FILTER



VALVES



QUICK RELEASE SOCKET

