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## Know your drinking water

Only 8% of India uses water purifiers.

1.1 It's important to know that water that looks and smells clean is not always clean.

Drinking Water Source	Probable Contaminants
a. Direct from tap (Municipal supply)	Chlorine, microbes, iron, lead (from pipes)
b. Direct from borewell or hand pump	Heavy metals, fluoride, arsenic, industrial and agricultural contaminations, etc.
c. Filter the supply or underground water using – gravity/candle based filters	
d. Local water cans (20 L water bottle)	Microbial contamination, algae, microplastics
e. Underground & Overhead storage	Algae, organics and particulate matter

1.2 What is TDS?

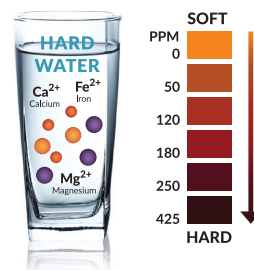
Total Dissolved Solids (TDS) refers to minerals, salts, metals, etc., dissolved in water. It is measured in ppm (parts per million).

1.3 What is hardness?

- Hardness is a measure of dissolved calcium and magnesium in the water, while TDS is the measure of all dissolved solids.
- Hence, hardness is a part of TDS, and so, the more the hardness of water, the more the TDS will be.

1.4 What does heavy metal contamination mean?

It is the excessive presence of metals like lead, cadmium, chromium, mercury, arsenic, etc., in water.



2

## 4 Steps for buying a water purifier

2.1 What is a water purifier?

A water purifier is a device that removes undesirable chemicals, biological contaminants and suspended solids from water ensuring you get pure, clean and safe drinking water.



### 2.2 - Step 1

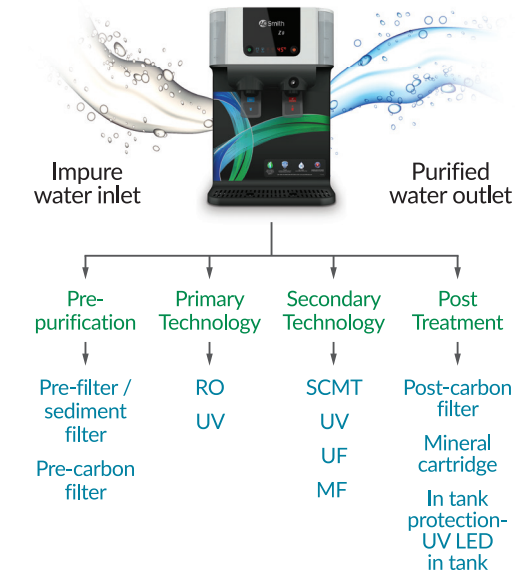
Find out the source of water at home

Source of water in your home	Probable TDS range* (PPM)	Suggested main technology
Municipal supply	<500	UV/UV+ or RO/ RO+
Municipal supply + borewell	>500	RO/RO+
Municipal supply + water tanker	>500	
Municipal supply + hand pump	>500	
Borewell, water tanker, hand pump	>500	

### 2.3 - Step 2

Choose the technology

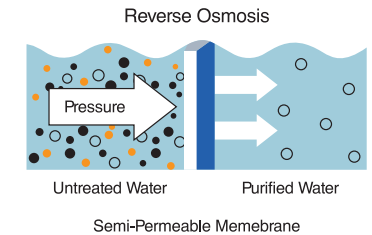
Here's how a water purifier works



### 2.3 B - Primary Technology

RO

The RO filter uses pressure to push water through a membrane which allows only pure water to pass to the other side.



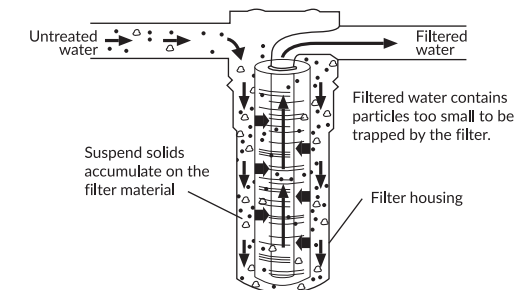
Ordinary RO+ UV Water Purifiers

- This technology bypasses some water directly to UV, without passing it through the RO membrane.
- Water bypassing the RO membrane may contain harmful substances like TDS, lead, arsenic, fluoride, pesticides and other chemicals.
- Long term usage of a bypass system can lead to severe health issues.

### 2.3 A - Pre-purification

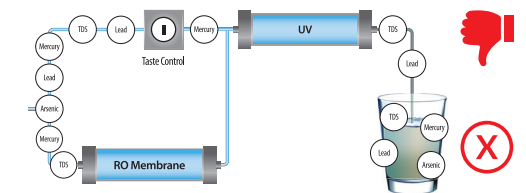
Sediment Filter/Pre-filter

- It is generally an external filter, put separately on the wall, it is included with all A.O. Smith water purifiers.
- It removes suspended solids like dirt particles, sand, rust, etc., from water.



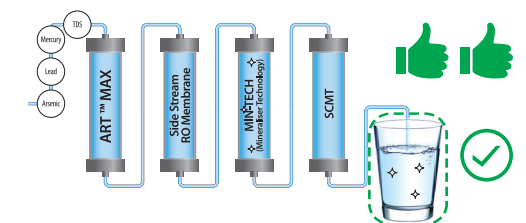
Pre-carbon Filter

- This filter provides treatment for organic chemicals, VOCs, pesticides, herbicides, and chlorine and its by-products.
- It removes odour and improves the taste of water.

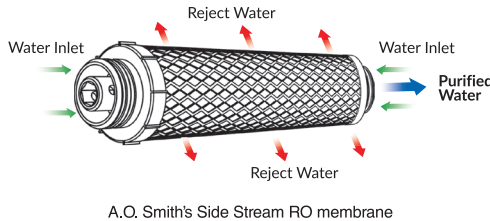


A.O. Smith Water Purifiers - 100% RO

- There is no bypass, 100% water passes through the RO membrane.
- All harmful substances get removed.



- A. O. Smith's RO membrane has a design patented Side Stream RO technology.
- Patented RO membrane and ART Max help ensure protection and good life of RO membrane while also reducing water wastage.



### UV Technology

- UV technology is generally used where TDS<500.
- When water passes through this filter, the UV rays deactivate the virus, bacteria and other microorganisms by altering the DNA of the cell using electromagnetic radiation.

### 2.3 C - Secondary Technology

#### RO+SCMT - Silver Charged Membrane Technology

- It is a patented design by A.O. Smith.
- It consists of a membrane charged with silver particles. This technology is more effective than UV, UF and MF, as it not only removes bacteria, virus, cysts but also colloids, particulates and endotoxins.

Filtration Technology	SCMT	UF	MF	UV
Virus	✓	✗	✗	✓
Bacteria	✓	✓	✓	✓
Cysts	✓	✓	✓	✗
Particulates	✓	✓	✓	✗
Endotoxins	✓	✓	✓	✗
Colloids	✓	✓	✗	✗
Chemical reduction	✓	✗	✗	✗
Phosphates	✓	✗	✗	✗

#### RO+UV - UV Technology

UV lamp filter is also used as a secondary source of purification along with RO, it uses the same mechanism as described above.

#### UF - Ultrafiltration

It is a type of membrane filter that removes cysts, bacteria, etc., but not all viruses and phosphates.

#### MF - Microfiltration

This also is a type of membrane filter having pore size bigger than UF. It does not remove any viruses, colloids or phosphates.

### 2.3 D - Post Treatment

#### Post Carbon Filter

This removes the bad taste and odour which improves the taste of the water.



#### Mineral Filter

This filter balances the pH value of the water from 7-8.5 by adding essential minerals like calcium and magnesium.

#### In-tank Protection

UV LED in tank

Some water purifiers have UV lamp in the tank, this helps keep the purified water stored in tank fresh and pure by activating UV LED inside the tank to prevent microorganisms from growing.

### 2.4 - Step 3

#### Choose the storage capacity

Generally, the storage capacity varies from 0 to 10 litres.

No storage	Called <i>Inline</i> system, present only in UV technology and not in RO. One should go for this if you never have electricity issues, because no electricity means no water.	
Upto 4 L	Best suitable for a family of 2-3 members.	
5-10 L	Best suitable for a family of 3-8 members.	

- The water storage tanks in most water purifiers are generally made of food grade plastic.
- A.O. Smith water purifiers are made using 100% food grade plastic, which is absolutely safe for water storage.

### 2.5 - Step 4

#### Decide where to place it

There are 3 suitable options

- Wall mount - On the wall.
- Table top - Placed on the table/ slab.
- Space under the counter for a water purifier - Several new apartments these days have space under the counter for a water purifier with a faucet/tap connecting to the counter.



### 2.6 - 3 Additional points to be considered

#### a. Value Added Features

##### Hot Water:

- Hot water helps boost immunity\* through different benefits like relief from nasal congestion and sore throat, it also helps enhance blood circulation, digestion and helps detox your body.



- A. O. Smith Z8, Z9 and Z1 models allow you to dispense mineralized hot water at the press of a button. You can choose warm or hot, as per your preference at 45°C or 80°C.

##### Night Assist:

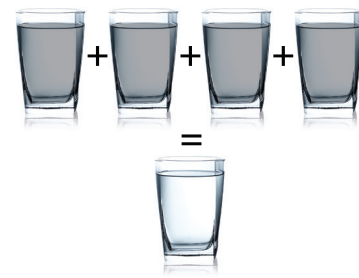
- This feature allows you to use your purifier in the dark without switching on the lights, moreover, it makes the water purifier look really nice.



#### b. Water Saving

- In RO technology, impure water is rejected out of the RO membrane upon purification and the amount of pure water that passes through the RO membrane is the water recovered.
- Water recovery means the percentage of water that passes though the RO membrane and is recovered as pure water, which is the percentage of water saved.
- 90% of the RO water purifiers in the market recover only one glass of pure water to every 4 glasses of input. So, the recovery is only 25%.

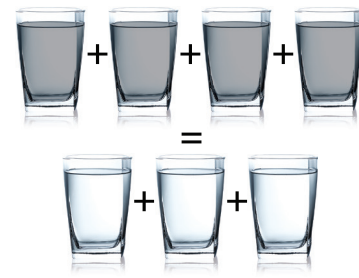
Recovery 25%



- A.O. Smith Green Series water purifiers ensure that you not only take care of your family but also your planet. Its patented Advanced Recovery technology helps you save 9000L of water annually.



Recovery 55%



#### c. Warranty

- Most brands offer warranty against any manufacturing defects which doesn't include any filter replacement.
- A. O. Smith offers comprehensive warranty on all of its products, which covers any issues with the machine as well as the filters.

ACSmith® | Water Purifiers

## WATER PURIFIER SELECTION GUIDE



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