



WATER  
DISINFECTANT

CHLORINE FREE



[ezemveloecosolutions.co.za](http://ezemveloecosolutions.co.za)



## BACKGROUND

The 2008 Report "Climate Change and Water" by the UN's Intergovernmental Panel on Climate Change (IPCC) describes climate change as an "additional burden" to providing water services, rather an understatement in relation to the accompanying catalogue of potential impacts. This ranges from "Salinisation of coastal aquifers" to "different kinds of pollutants" introduced by floods and other means. A long list of adaptation strategies in the IPCC report concludes with a brief recognition that developing countries cannot possibly afford them and may have to resort to "unsustainable practices such as increasing ground water over-exploitation".

Water is a shared resource, its management can be a sensitive social, cultural, and environmental issue, particularly with climate change and in times of drought and increasing water restrictions. The Rubicon technology platform and product offering allow the company to compete in most established water purification and disinfectant markets, as well as to address specific niche applications that are not currently being serviced by existing products and/or solutions.



FACT :  
CONTAMINATED  
WATER  
LIFE  
IMPACT  
CONSEQUENCES

A report published recently in the medical journal "the Lancet" concluded that poor water sanitation and a lack of safe drinking water take a greater human toll than war, terrorism and weapons of mass destruction combined

Nearly 4 million people die each year from a contaminated water related illness, mostly children under the age of 5.

- That's over 330,000 people a month
- ...10,000 people a day
- ...400 people each hour
- ...over 7 people a minute
- ...and one person every 8 seconds!



## THE AIM

Ezemvelo's vision and goal is to become the world's leading environmentally friendly water disinfectant. It believes in its solutions, and its belief system is founded on the philosophy and approach to make a radical change in the way drinking water and polluted water are being treated conventionally. Rubicon has the potential for affecting and touching the lives of all persons on earth, as well as directly or indirectly most businesses and industries.







**THE RUBICON  
PRODUCT  
DEVELOPMENT &  
ASSOCIATES  
CHEMICAL  
SUPPLIERS**

PRODUCT DEVELOPMENT AND ASSOCIATED SUPPLIERS  
Rubicon is formulated from chemicals that is provided by  
global recognized suppliers

CONTRACTED MANUFACTURER

MAD-Packaging, Donkerhoek, Pretoria  
[www.mad-packaging.co.za](http://www.mad-packaging.co.za)



WHY  
RUBICON ?

COST  
EFFECTIVE  
WATER  
PURIFICATION

&

COMBATING  
GLOBAL  
WARMING

Rubicon water treatment products are cost effective and more potent than any existing water purification products, are non-toxic and harmless without forming any adverse disinfection by-products (DBP) and are completely environmentally friendly.

Our products provide easy-to-use solutions for fighting and eliminating water-borne diseases such as diarrhoea, cholera, typhoid and other, provide radical improvements in disinfecting drinking water and groundwater in industrialized and developing countries.

There is limited existing means available for the cost-effective treatment of water-borne diseases on a micro-level in developing countries or in remote rural areas. These existing means for disinfecting drinking water and wastewater make use of toxic and environmentally unfriendly chemicals that form even more harmful by-products.

Rubicon is a free flowing granular, soluble in water containing no chlorine or any halogen-based product. It is a proprietary blend of various inorganic salts acting as a powerful oxidizer, disinfectant, and coagulant, which makes it excellent for conditioning of drinking water. It is superior to chlorine in the destruction of spores, bacteria, viruses, fungi, and other pathogen organisms and destroys phenols.

Globally, around 3 billion people cook, boiling water for drinking of which China accounts for approximately 500 million of them boiling their drinking water using open fires and inefficient stoves. These energy sources generate air pollutants that contribute to climate change and negatively impact health.

Rubicon will render the necessity of boiling water unnecessary while substantially reducing CO2 emissions and other GHG's resulting in millions of metric tons reduction in CO2's based on its anticipated footprint.





# RUBICON IS HEALTH CONSCIOUS

Rubicon does not create THM's (Trihalomethanes) or other disinfection by-products (DBP's), and is not affected by photo-de-composition, temperature, and aeration. For the treatment of drinking water, the primary products from the reduction of Rubicon are oxygen and water making it one of the safest disinfectants known. It has a unique ability to penetrate and break up biological deposits even at residual concentrations as low as the levels normally maintained in potable water distribution systems. Rubicon has a long residual life span. It is completely environmentally friendly and containing an excellent coagulant to ensure aesthetically clean drinking water.

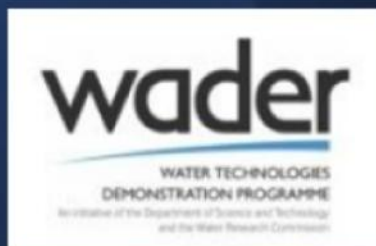
Rubicon is used to disinfect contaminated water, organics and colour, taste, and odour reduction, and will not produce endocrine disrupting chemicals (EDCs) while removing pharmaceutical and personal care products (PPCPs). It is a group of compounds that exhibits the highest oxidizing properties of any chemical known, with an Oxygen Reduction Potential (ORP) of 2.2.

All claims have been scientifically substantiated by the most reputable institutions locally and internationally including the WHO with tests conducted by the NSF while the disinfection criteria of the WHO were exceeded by almost 100%.

The product has also been approved by the South African Dept. of Health to be fit for human consumption including the Dept. of Agriculture, Dept. of Health India and various other countries.

Rubicon obtained the highest accreditation by any water disinfectant in the world conducted by the esteemed Research Institution namely BSRC (Bio-Safety Research Centre) in Japan after comprehensive medical science tests tantamount to the FDA protocol.

# RUBICON WATER TECHNOLOGY ADVISORY NOTE January 2022



WATER  
RESEARCH  
COMMISSIONER



Rubicon is more aggressive and faster than chlorine in disinfecting water, which is removing spores, bacteria, viruses, fungi, and other pathogenic organisms and destroys phenols.

The resulting disinfected water has high and improved coagulation properties which makes it safe for drinking.

It also does not form THM's (Trihalomethanes) or other disinfection by-products (DBP's).

Rubicon is easy to dose, control, and has a long residual life span

The most common chemical for water disinfection is chlorine and it is often associated with potential negative effects of chlorination by-products. Rubicon contains no chlorine or any halogen hence, it may address some challenges associated with chlorine.




Generally, Rubicon could add value in the water treatment process.

Scientific tests have been done by esteemed research institutions in the world such as the CSIR, Intertek and different government departments in South Africa, India, Japan and Uganda. The Rubicon technology is at TRL level 8 and does not require further development and has been tested extensively locally and globally.







# RUBICON ACCREDITATION & TEST REPORTS

INSTITUTION	REPORT DATE	PRIMARY TEST	TEST RESULTS
<a href="https://www.who.int">https://www.who.int</a>  <b>World Health Organization</b>	May 2020	Pathogen, bacteria protozoa and virus contaminated tests	Disinfected within 20 minutes - Exceed WHO criteria by almost 100%
<a href="https://www.nsf.org">https://www.nsf.org</a>  <b>INTERNATIONAL PUBLIC HEALTH AND SAFETY ORGANISATION</b>	May 2020	Pathogen, bacteria protozoa and virus contaminated tests	Disinfected within 20 minutes
<a href="https://www.acronymfinder.com/Biological-Safety">https://www.acronymfinder.com/Biological-Safety</a>  <b>BIOLOGICAL SAFETY RESEARCH CENTRE (NATIONAL INSTITUTE OF HEALTH SCIENCES; JAPAN) (BSRC)</b>	January 2019	Toxicity and hazardous for human consumption tests	Not harmful for human consumption (no carcinogenic risk)









# RUBICON ACCREDITATION & TEST REPORTS

INSTITUTION	REPORT DATE	PRIMARY TEST	TEST RESULTS
<p><a href="http://www.noatech.jp/">http://www.noatech.jp/</a></p>  <p>NOATECH NOATECH JAPAN</p>	September 2021	Removal of Arsenic and fluoride	Effective removal within 20 minutes
<p><a href="https://www.epa.gov/saferc/hoice/design-environment-alternatives-assessments">https://www.epa.gov/saferc/hoice/design-environment-alternatives-assessments</a></p>  <p>DESIGN FOR ENVIRONMENT U.S. EPA</p>	2020	Design for the environment status	ONLY WATER PRODUCT IN THE WORLD THAT CAN CLAIM THIS ACCREDITATION









# RUBICON ACCREDITATION & TEST REPORTS

INSTITUTION	REPORT DATE	PRIMARY TEST	TEST RESULTS
<p><a href="https://www.csir.co.za">https://www.csir.co.za</a></p>  <p>COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH (CSIR)</p>	2009	<p>Highly contaminated Cholera test</p> 	Disinfected within 20 minutes
<p><a href="https://health.gov.za">https://health.gov.za</a></p>  <p>DEPARTMENT OF HEALTH SOUTH AFRICA</p>	2010	<p>Confirm the CSIR report Cholera and bacteria tests</p> 	Not harmful for human consumption
<p><a href="https://www.tut.ac.za">https://www.tut.ac.za</a></p>  <p>TSHWANE UNIVERSITY OF TECHNOLOGY (TUT)</p>	2010	<p>Highly contaminated E.coli test</p> 	Not harmful for human consumption (no carcinogenic risk)





# RUBICON ACCREDITATION & TEST REPORTS

INSTITUTION	REPORT DATE	PRIMARY TEST	TEST RESULTS
<p><a href="http://wri.csir.org.gh/in-depth">wri.csir.org.gh/in-depth</a></p>  <p>WATER RESEARCH INSTITUTE GHANA</p>	2015	Pathogen, bacteria protozoa and virus contaminated tests	Disinfected within 20 minutes
<p><a href="https://www.eskom.co.za">https://www.eskom.co.za</a></p> 	2009	Aerobic/Anaerobic bacteria test	Disinfected within 20 minutes
<p><a href="https://www.intertek.com">https://www.intertek.com</a></p> 	2016	Pathogen, bacteria protozoa and virus contaminated tests	Disinfected within 20 minutes
<p><a href="https://www.tatachemicals.com">https://www.tatachemicals.com</a></p> 	2016	Pathogen, bacteria protozoa and virus contaminated tests	Disinfected within 20 minutes








# RUBICON ACCREDITATION & TEST REPORTS

INSTITUTION	REPORT DATE	PRIMARY TEST	TEST RESULTS
<p><a href="https://mwe.go.ug">https://mwe.go.ug</a></p>  <p>MINISTRY OF WATER AND ENVIRONMENT REPUBLIC OF UGANDA</p>	<b>2018</b>	<b>Pathogen, bacteria protozoa and virus contaminated tests</b>	<b>Disinfected within 20 minutes</b>
<p><a href="https://www.jalshakti-ddws.gov.in">https://www.jalshakti-ddws.gov.in</a></p>  <p>Ministry of Drinking Water and Sanitation Government of India</p>	<b>2015</b>	<b>Pathogen, bacteria protozoa and virus contaminated tests</b>	<b>Disinfected within 20 minutes</b>



# RUBICON ACCREDITATION & TEST REPORTS

INSTITUTION	REPORT DATE	PRIMARY TEST	TEST RESULTS
<p><a href="https://www.aquatico.co.za">https://www.aquatico.co.za</a></p>  <p><b>AQUATICO SCIENTIFIC (PTY) LTD</b></p>	2018	Pathogen, bacteria protozoa and virus contaminated tests	Disinfected within 20 minutes
<p><a href="https://www.gov.za/department-agriculture-fisheries-and-forestry">https://www.gov.za/department-agriculture-fisheries-and-forestry</a></p>  <p><b>DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERY SOUTH AFRICA</b></p>	2017	L- registration certification to sell Rubicon product in retail stores	Approved
<p>Food for the Hungry Kenya — Blood: Water (bloodwater.org)</p>  <p><b>BLOOD: WATER KENYA</b></p>	2015	Letter of Recommendation	Excellent disinfection properties for remote villages and urban cities in Africa.





## PRODUCT SUMMARY

The Product is a proprietary blend of various inorganic persulphate salts, natural anti-microbial substance composed of a combination of food approved natural amino acids salts, Trisodium salts, monosodium L-glutamate complexes and a human friendly algaecide, coagulant, flocculant mixture.

The product has unique characteristics to ensure potable water quality regardless of the level of microbial contamination.

Dept. of Health (RSA) approval to be fit for human consumption including various other reputable institutions globally such as WHO, NSF and BSRC (Bio-Safety Research Centre) Japan.



health

Department:  
Health  
REPUBLIC OF SOUTH AFRICA



## EASY-2-USE SUMMARY

“Rubicon re-branded  
as Rubicon Micro”



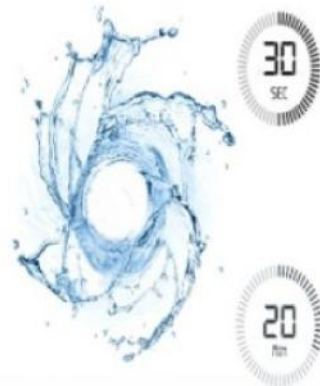
### Step 1

Take one 3.5g sachet of  
Rubicon Micro Water  
Purifier Powder



### Step 2

Tear sachet open and add  
contents to 25 liters of  
water



### Step 3

Stir water well for 30  
seconds. Total disinfection  
within a few minutes and  
water drinkable within 20  
minutes



### Step 4

Leave water for at least 45  
minutes for flocculation to  
take place. In the event of  
high turbidity water a few  
hours flocculation period  
will ensure crystal clear  
water.



### Step 5

If needed filter sediment  
in container through a  
clean cloth



### Step 6

Drink & Enjoy





## USE CASE SUMMARY

Remote, rural and urban areas without access to clean water



Effluent wastewater for municipalities



Effectively also removes Arsenic and Fluoride





# USE CASE SCHOOL WATER SUPPLY PROJECT OPTION 1

“Rubicon re-branded  
as Rubicon Micro”



## Step 1

Ensure sufficient large water tanks and access to a water supply that can fill tanks at each school



## Step 2

Supply school with 25 liters plastic water containers with taps. 1 container for every 13 children (1.9 liters per child)



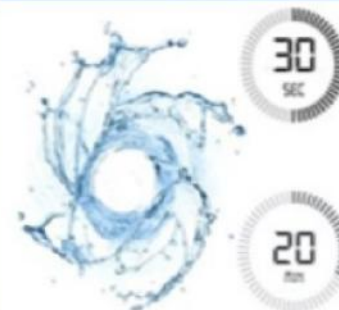
## Step 3

Daily fill the empty 25 liters water containers at the water tanks (only refill the containers once empty)



## Step 4

Take one 3.5g sachet of Rubicon micro Water Purifier Powder Per 25 liters container per day



## Step 5

Stir water well for 30 seconds. Total disinfection within a few minutes and water drinkable within 20 minutes



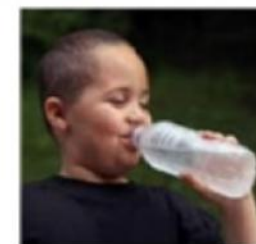
## Step 6

Leave water for at least 45 minutes for flocculation to take place. In the event of high turbidity water a few hours flocculation period will ensure crystal clear water.



## Step 7

If needed filter sediment in container through a clean cloth



## Step 8

Provide children with small water bottles they can refill at the purified 25 liters water tanks whenever required





# USE CASE SCHOOL WATER SUPPLY PROJECT OPTION 2

“Rubicon re-branded  
as Rubicon Micro”



## Step 1

Determine how many liters of water needs to be disinfected per month per school then calculate how many 3.5g sachets of Rubicon Micro Water Purifier Powder is needed



## Step 5

Add 200 X 3,5 Rubicon sachets per 5 000 lt tank  
Stir water well for 30 seconds. Total disinfection within a few minutes and water drinkable within 20 minutes



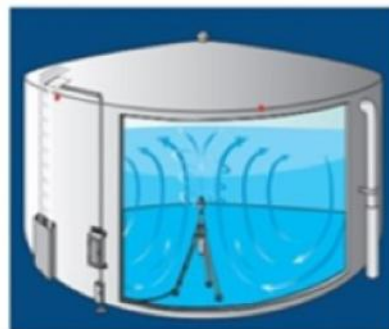
## Step 2

Install at least one 10 000lt water tank and one 5 000lt water tank per school



## Step 6

Release Rubicon disinfected and purified water from the 5 000 lt tank into the 10000 lt tank after 24 hours



## Step 3

Install a water mixer device similar to the PAX unit in the image to the left inside the first tank ( 5 000lt) to enable automated water stirring



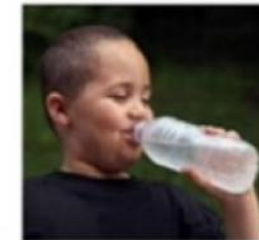
## Step 7

Water that is safe to drink and disinfected can now be provided from the 10 000 liters tank



## Step 4

Fill the empty 5 000 liters water tanks when needed with “unsafe drinking water”



## Step 8

Provide children with small water bottles they can refill at the purified 10 000 liters water tanks whenever required



USE CASE  
BETTER  
ALTERNATIVE  
TO  
HEALTH  
DANGERS  
OF  
CHLORINE  
  
RUBICON  
IS  
CHLORINE  
FREE

Harmful pathogens in water are destroyed using disinfectants such as chlorine, chlorine dioxide, chloramine, ozone, and ultraviolet (UV) light. However, some naturally occurring organic matter, anthropogenic contaminants, bromide, and iodide are also present in water, and when a chemical disinfectant such as chlorine is added to water, it tends to react with organic matter to form disinfection by-products (DBPs), which are known to have adverse health effects on humans. Many disinfection by-products (DBPs) are known for their carcinogenic, mutagenic, cytotoxic, genotoxic, or teratogenic effects.

According to recent research in Europe, pregnant women in their first trimester who drink five or more glasses of chlorinated tap water a day may be at a much higher risk of miscarriage than women who drink non-chlorinated water.

Recently, a joint study was undertaken in Japan by research scientists at the National Institute of Health Sciences and Shizuoka Prefectural University. They determined that natural organic substances originating from foods, including fruits, soy, and green or black tea, react negatively when tap water is chlorinated, forming dangerous cancer-causing compounds. These deadly compounds have been named MX, which stands for "unknown mutagen", and are like the already well known and more easily detected cancer-causing THMs (Trihalomethanes).

The Japanese scientists specifically mentioned that their studies showed that MX is created by the reaction of chlorine with natural organic plant phytochemicals such as catechins, which are contained in tea, and with flavonoids, which are found in fruits

The Environmental Protection Agency has continually tightened their restrictions on THMs in public drinking water and even tighter restrictions more than likely lie ahead. Yet it appears that many government agencies and chlorine-related industries have neglected to take a serious look at the long-term effects chlorination has on natural foods, health supplements, pharmaceutical drugs, in combination with the use of chlorinated tap water.

There is good reason for the public to seriously examine and question this entire issue. Many years ago, laws were passed making chlorination of water mandatory. If drastic changes are made, the legal liabilities could be staggering. Certainly, government or industry personnel have theorized about these problems. According to researchers, this predicament could make the tobacco industry scandal seem insignificant in comparison.



## USE CASE

DR. MERCOLA

“TAKE CONTROL OF YOUR  
HEALTH”

FLUORIDE  
HEALTH  
RISK  
FACTS

RUBICON  
IS FLUORIDE  
FREE AND EFFECTIVELY  
REMOVES FLUORIDE  
FROM WATER.

Findings from a fluoride study published in JAMA Pediatrics in 2019 and another published in Environmental Health in 2017 have garnered the most attention in fluoride research in recent years. Researchers in the JAMA study compared the IQ of children who were born in areas using fluoridated water against those in areas using non-fluoridated water. The data demonstrated there was as much as a five-point drop in IQ when an infant is exposed to fluoride in utero. Christine Till is a neuropsychologist from Toronto, Canada, and lead scientist on the study

What is sometimes forgotten is that fluoride was added to the water supply not because scientists originally believed that it would help reduce cavities in children's teeth, but because they had an abundance of the key chemical used in making the atomic bomb. Unfortunately, it was also one of the most toxic chemicals for the workers and nearby communities

Declassified documents revealed a body of evidence that fluoride had significantly negative health effects. Without a way to adequately dispose of the toxin, scientists and the military developed “Program F” in an effort to find evidence that could help defeat litigation against fluoride's effect on human injury.

Exposure to fluoridated water also increases the number of children diagnosed with attention deficit hyperactivity disorder. But, the effects of fluoride do not end in infants and children. One 2019 study demonstrated that chronic low-level fluoride exposure alters sleep patterns of adolescents aged 16 to 19.

The level of evidence that fluoride is neurotoxic far exceeds the evidence that was in place when lead was banned from gasoline. During an interview in June 2021, Connett, who holds a degree in chemistry and specializes in environmental toxicology, said: “Fluoride is following the same trajectory as lead because basically, whether or not you found a neurotoxic effect for lead was simply a function of how well designed your study was. The better your study was designed, the more likely you were to find that lead was lowering IQ. The same thing is happening with fluoride.”



# USE CASE

## Mining Industry



NOATECH  
Japan  
Scientific Test  
Results confirm  
Rubicon  
removal of  
Arsenic

Acid mine drainage (AMD) formation and toxic arsenic (As) pollution are serious environmental problems encountered worldwide.

Arsenic occurs naturally in rocks and erosion of these can cause arsenic to be released into water.

Drinking water is the main source of arsenic exposure to the living organisms. Continuous exposure to arsenic pollution has been shown to cause damage to the central nervous system, kidney, skin, liver and lungs in humans. The International Agency for Research on Cancer classified arsenic and its compounds as being carcinogenic in humans.

Long-term contact with arsenic contaminated water can lead to pigmentation of the skin and development of hard patches on the palm of humans. The development of more effective water treatment is required to satisfy the new regulations.

In recent years, membrane techniques, including nanofiltration and reverse osmosis, are increasingly reported for arsenic removal from water. Such techniques have advantages of high-removal efficiency, easy operation and minimum toxic sludge generated during the process. But the initial investment and running cost are relatively high.

Rubicon removes Arsenic contaminated water for less than 20 cents (ZAR) a litre.



# USE CASE MUNICIPAL WASTEWATER TREATMENT

RUBICON  
THE COST-  
EFFECTIVE  
SOLUTION  
IN A  
SACHET

Considering the unique characteristics of Rubicon it should be construed as a Municipal Wastewater Treatment Plant in a sachet as the product coagulate/flocculate and disinfect in one go to ensure aesthetically clean drinking water.

Rubicon disinfects contaminated water for less than 20 cents (ZAR) a litre.

USE CASE  
Q & A  
Zambia  
Lusaka  
River water  
11 December  
2021



Photos of the water samples from Zambia with references to the coagulation/flocculation process.



It is imperative to cognitively understand the green chemistry of the Rubicon water purifier without the formation of any disinfectant by-products while the final product will generate down to oxygen and water.

Highly pathogenic contaminated water treated with Rubicon will be fit for human consumption within 3 minutes however we need to adhere to the international protocol of 20 minutes. The coagulation/flocculation as stipulated in our literature will take from 20 minutes up to 24 hours depending on the turbidity of the water while the surface tension of the water also plays a pivotal role in the clearing of the water. Should the water not be aesthetically clean within 20 minutes it will certainly be safe to drink without any fear of any type of contamination, although it might not look acceptable to drink. Rubicon's unprecedented disinfection traits sometimes impedes the coagulation/flocculation process and consequently, the reason for the delayed clearing to aesthetically clean drinking water.. Based on our green chemistry it would be superfluous to immediately ensure aesthetically clean drinking water in creating a spectacular wow !! demo with detrimental side effects like all other products on the market.



# USE CASE

Q & A

INDIA

Bengaluru

20 December  
2021



## 1. Can Rubicon be used on the sewage treated water for drinking?

It will certainly be able to treat sewerage water to drinking quality also eradicating any obnoxious smell while considering the coagulation/flocculation time might be a few hours. However highly polluted raw sewage water might have to be dosed with 2 sachets per 25 lit if it's extremely polluted sewage water also containing a plethora of other toxic contaminants. The best would be to determine the dosage rate by application.

## 2. If used on sea water, is it drinkable?

Only Reverse Osmosis (RO) process will remove brine from sea water and consequently not able to reduce the saline (salty taste) from the water.

## 3. Should it be repeatedly used on the same water or once would be enough? where does the sediments deposit, is there a filtering process involved?

Only one treatment is enough to ensure clean & safe drinking water as the product has excellent residual value (continuous disinfection) properties and the sediment can be removed by filtering the water through any type of cloth ensuring aesthetically clean drinking water. No sophisticated filtering process is necessary after the coagulation/flocculation process have been completed as the sediment will also be disinfected and consequently only the need of a conventional filter through a terry cloth or any cloth will suffice.

## 4. What is the volume of powder to be used in 1TMC?

28,000,000 m<sup>3</sup> water to be treated should be calculated at 140ppm dosage.

## 5. We'll need more study materials and approvals from the FDA or an authorized body?

The most accredited global authority for water treatment to drinking quality is the WHO (World Health Organization) in conjunction with the NSF of which the test results are available.





## IN CLOSING



THE  
SAFE  
SOLUTION



- RUBICON – EASY DOSAGE, TASTELESS, NON-TOXIC, ENVIRONMENTALLY FRIENDLY
- 3,5 GRAMS POWDER CLEANS UP TO 25 LIT CONTAMINATED WATER
- EXCELLENT FLOCCULATION TRAITS ENSURING CLEAN DRINKING WATER
- DESTROYS SPORES, BACTERIA, VIRUSES, FUNGI, PATHOGENS
- 100% KILL RATE ON HIGHLY CONTAMINATED CHOLERA WATER.
- FREE FROM CHLORINE, BROMINE, IODINE - DOES NOT CREATE THM'S & HAA'S, DCA's, MX – factor (DBP's) or EDC's
- SCIENTIFICALLY CERTIFIED.







# RUBICON COMPETITIVE ANALYSIS GLOBALLY (SUMMARY)

COMPARISON	EZEMVELO ECO SOLUTIONS	PROCTER GAMBLE	& KATADYN	EUREKA FORBES HINDUSTAN UNILEVER LTD TATA CHEMICALS	ENVIRONMENTAL PLANNING GROUP Ltd	WATERWORKS HOLDINS INTERNATIONAL
Brand Name	Rubicon	PuR Purifier of Water	Micropur	Prueit/Tata Swatch	EPGL	UV Waterworks
What it is?	Blend of inorganic persulphate salts, anti-microbial human friendly acids and coagulant with excellent flocculation properties	Blend of ferric sulphate and calcium hypochlorite	Silver chloride complex with silver ions	Water purifiers that operate with replaceable filters Filter's battery operated or combination of paddy hush and silver particles	Small scale Reverse Osmosis plants operated in metropolitan areas for institutions	Small scale Ultraviolet (UV) treatment plants that operate in partnership with communities



# RUBICON COMPETITIVE ANALYSIS GLOBALLY (SUMMARY)

Description	Conditioning of drinking water at point of use, complementary to UV, ozone & other disinfection processes with good residual value	Used in combination with filter to make contaminated water potable through coagulation & disinfection at point of use	Available in tablet, powder & liquid format Inactivate bacteria in tanks & containers up to 6 months	Portable water purifiers with replaceable filters are used in homes Kill up to 80% of bacteria causing water borne diseases	Provide solutions (Containerized water) to commercial, academic and other institution	High dose of UV inactivates micro-organisms, use gravity driven flow channel
Features	Environmental friendly, non-toxic & safe, free from chlorine, bromine & iodine Destroys spores, bacteria, viruses & most common pathogen organisms	Chlorine based Removes chlorine resistant parasites, destroys bacteria & viruses Leads to average 50% reduction in incidence of diarrhoea	Chlorine based Suspended matter in cloudy water weaken effect of chlorine and silver ions	Requires no running water or energy to operate Distribution & support in remote & rural areas seem difficult and ineffective	Technology won various innovation rewards in India Requires electricity infrastructure to operate	Free of chemicals & carcinogenic DBPs Energy efficient & does not require high pressure No residual value & suffers from same limitations as large scale UV plants
Markets	Global strategy	Pakistan, Kenya, Uganda, Haiti, Dominican Republic Disaster relief	Global travel & leisure Disaster relief	India metropolitan areas	India metropolitan areas	India metropolitan & Rural areas



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