

Cap Type Simple Water purifier for Water Purifier for Sustainable Water Problem Solving & Green ODA



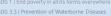


SDG 6 | Ensure availability and sustainable management of water and sanitation for all













Waterborne diseases remain a significant public health concern in humanitarian settings, particularly among forcibly displaced populations. The intersection of climate-induced disasters, inadequate infrastructure, and displacement has heightened the vulnerability of affected populations to waterborne diseases.







very 2 minutes, a child dies from a waterborne disease in crisis zones. 🤊

- •1.7M displaced by floods in Somalia (UNHCR, 2023)
- •4.4M water-related illness cases in Pakistan post-flood (WHO, 2022)
- •900,000+ Rohingya at risk during monsoons (WFP/UNICEF)

Clean water is not just a need—it's an emergency.

Existing Water Solution Technology	Treatment Plant	Boiling Water	Membrane(Plastic) Filter	Water bore
Problems	<ol> <li>High Cost</li> <li>High maintance cost</li> <li>Unmanageable in poor and working class living environments</li> </ol>	<ol> <li>Deforestation due to firewood collection for boiling water</li> <li>Increased carbon emissions from water boiling</li> <li>High incidence of lung diseases among refugee populations</li> </ol>	<ol> <li>Short filter lifespan         Inability to produce or replace filters locally         High cost         Contribution to plastic waste     </li> </ol>	1. High cost 2. Distance from household to water bore 3. Bacteria and heavy metals detected in groundwater

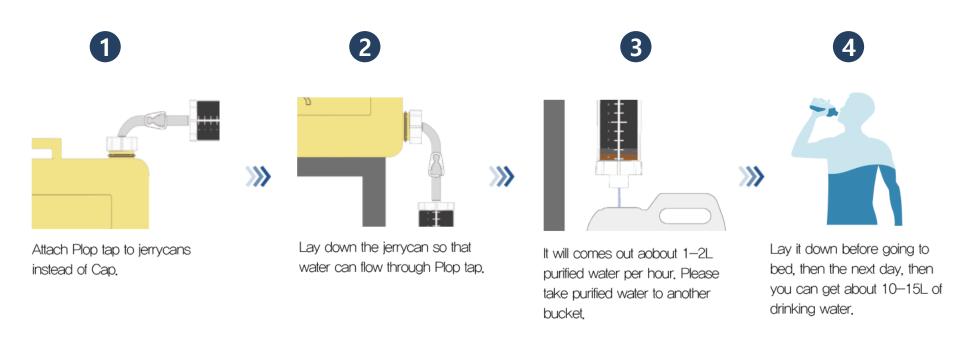
### **Innovative Solution: Plop Tap**



# **Plop Tap: Sustainable Solution**

Zero Electricity 91.5% reduction in water disease Low maintenance cost: \$1 / 2,000L filter cost 20 USD / 5 years / household Removes heavy metals & pathogens small and lightweight: 7x7x19cm | 130g | Simple Paper Filter Replaceable ZERO carbon emission

# **HOW TO USE**



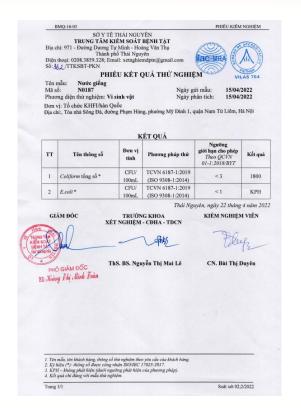


# **Effectiveness of Plop Tap**

	PLOP TAP	Membrane(Plastic) Filter	Clay Purifier
1.Light-weight and small	0	O	X
2.Locally produce filter	0	X	0
3.Cost	20\$	76\$	30\$
4. Duration	5 years	1 year	1.5 years

# **Technical data in Vietnam**





Detected 1800 CFU of *E. coli* → *E. coli* not detected after treatment

# **Technical data in Korea**



- 970 CFU before treatment → 0 CFU after treatment (meets WHO and domestic standards)
- 92 NTU turbidity before → 0.08 NTU after treatment (meets WHO and domestic standards)

# Field Test in Tanzania

THE UNITED REPUBLIC OF TANZAMIA MINISTRY OF WATER	THE UNITED REPUBLIC OF TANZAMIA MINISTRY OF WATER
Talagram WTC:  Telepron: 25-22-29-4748 South: 25-22-39-4748 Verigoro: 25-22-39	Telegram's MICP   Recommend
Is movement to Na M000L 198. 79295  1.0 GENERAL DESECUTION Analysis requested by SUGECO ReportMorogoro District Morogoro MC VariaMagadu Villageistreet SUA Simpling LocationBefore Treatment. Sampling Data16.12.2024 Received Delet16.12.2024 Type of waler Natural Portable Water Sample collected by Client. No Preservation done  2.0 WATER SAMPLE ANALYTICAL RESULTS 2.1 Bodenfological results. 3Me	1.0 GENERAL DESRCIPTION Analysis requested by SUGECO
Reporting Officer Date    Statut acase   Part   Par	Reporting Officer  Date  ModRed Rd Water Laboratory  LABORATORY OF LABORATORY  MAI VARD, MAZIMBU ROAD  P. D. BOX 2826  MOROGORO  After

- 64 CFU before treatment → 0 CFU after treatment (meets WHO and domestic standards)





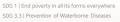


SDG 6 | Ensure availability and sustainable management of water and sanitation for all











# **UN & WHO**

- waterborne diseases are causing more deaths than COVID19 & wars
- even nowadays, about 1,300 children under the age of 5 die of a severe diarrhoea caused by **contaminated drinking water** a day in the world.
- 5 million people die every year from waterborne diseases, of which 3 million are children.



# **Product Info**

## **Cap-Type UV Drinking Water Sterilizer**

(B2C) – Kitchenware, Outdoor, Camping, Hiking, Baby Product (B2B,G) – Government offices such as national hospitals and kindergartens, FEMA; ODA



## **Sterilization Technology Data**



Water sterilization test report: E. coli, Pseudomonas aeruginosa, Salmonella, Staphylococcus aureus 99.9% or more removed

## **Sterilization Technology Data**



Surface sterilization test report: E. coli, Pseudomonas aeruginosa, Salmonella, Staphylococcus aureus 99.9% or more removed





Minister of Employment and Labor Award, SK Innovation Environment Ministry Contest Award, Army Chief of Staff Award





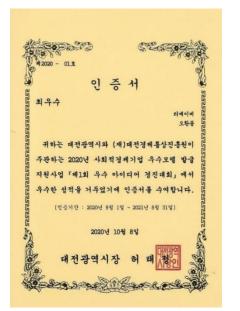
dyson

This letter confirms that Oh Hwan Jong was awarded the position of National Winner in the James Dyson Award 2016.

The James Dyson Award is an international design competition that challenges students of design and engineering to design something that solves a problem. In 2016, the competition was open to students from 22 countries worldwide. The James Dyson Award is run by the James Dyson Foundation, Dyson's charitable orm.

Oh Hwan Jong entered the competition with LADIS (LAMP WATER DISINFECTION); through using a UV light, LADIS starlizes the water without changing BH, Lades, sent, temperative, ingredients, and formation. This team project was chosen by a panel of expert judges as National Winner in the James Dyson Award 2016. Team Alpha Brain was awarded USD 3,000 so support their development in the field of design and engineering.



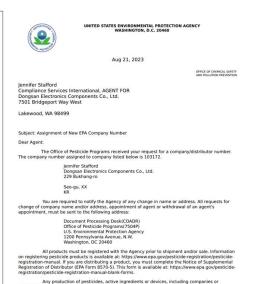


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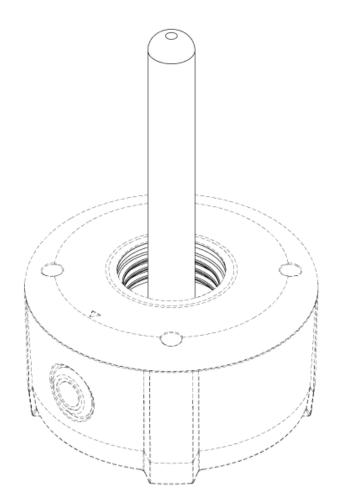
establishments that import into the United States, must be conducted in a registered pesticideproducing or device-producing establishment. Information on registering an establishment can be

device-producing.

https://www.epa.gov/compliance/epa-form-3540-8-application-registration-pesticide-producing-and-

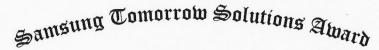
KC, CE(EMC, RoHS), FCC, EPA Certification Completed

【도면 1.1】



# Securing strong intellectual property rights

Overseas Intellectual Property Rights
US, China, Japan, Vietnam, Europe, Africa =
Registered, US trademark registration completed
for Amazon US entry



# 최우수상

IDEA부문 Team Alpha Brain팀 권현도, 김장생, 박성연, 오환종

위 팀은 삼성 투모로우 솔루션 공모전에서 사회문제 해결을 위한 창의적 아이디어를 제안하고 실행하여 우수한 성과를 거두었으므로 이 상장을 수여합니다.



2018년 11월 2일

삼성전자주식회



SAMSUNG TOMORROW SOLUTION – The Grand Prize / Selection of Samsung Electronics Sponsorship Business



### **Field Test**

Laos: Berkeo County & Philippines: Dinarupian City (2,000 units, 2,000 households supplied)



Test results : More than 60% reduction in waterborne diseases



1차 항암치료(관해요법) 시작 전의 인영이, 수혈을 해도 안색이 살아나지 않는다.

또 하나. 인영이가 지내는 무균실은 말 그대로 무균 상태를 유지해야 하기 때문에 여러 면에서 엄격한 통제가 이뤄진다. 특히 환아에게 익히지 않은 모든 음식은 먹일 수 없고, 생수도 '제주'라는 상표의 <mark>생수만 허용되며 개봉한 지 4시간이 넘으면 먹여선 안 된다.</mark> 그런데 아이러니한건 인영이에게 나오는 가루약을 타서 주는 작은 약병은 한번 쓰고 버리니 간호사가 그러지 말고 잘 씻어서 말려 재사용하라고 한다. 아니 <mark>생수는 4시간 내에 먹고</mark> 빨대나 종이컵을 사용하라 하면서 인영이 입에 직접 닿는 약병은 재활용하라니... 이해는 안됐지만 따지는 게 무의미하다는 생각에 약사 친구에게 빈 약통한 박스를 보내달라고 했다.



# **Target: Hospital Supplies**

a sterile room patient (cancer treatment, leukemia, organ transplantation, etc.)



- Ukraine's Kiev Children's Hospital: 1,000EA
- East Timor(Hospital): 500EA
- Nigeria(Hospital): 500EA
- Uganda(midwifery room): 500EA









**Kiev Ohmadyt National Children's Hospital, Ukraine** 



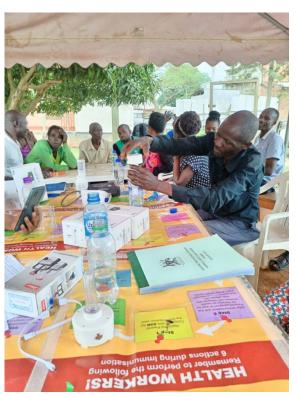




60th Anniversary of Diplomatic Relations in Uganda & Korea







**Uganda's Kakiri Midwifery** 







East Timor, Dili, Rural Village & Hospital





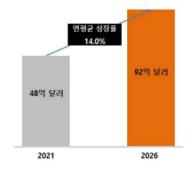


Nigeria, Lagos, Outreach Hospital

## 2.1 글로벌 전체 시장 규모

□ 전 세계 자외선 소독 장비 시장은 2021년 48억 달러에서 연평균 성장률 14.0%로 증가하여, 2026년에는 92억 달러에 이를 것으로 전망됨

[그림 2-1] 글로벌 자외선 소독 장비 시장 규모 및 전망



※ 출처 : MarketsandMarkets, UV Disinfection Equipment Market, 2021

#### 2.2 세부항목별 시장 규모

- □ 전 세계 자외선 소독 장비 시장은 용도에 따라 식수용, 하수용, 산업용수용, 기타용으로 분류됨
  - 식수용은 2019년 11억 7,282만 달러에서 연평균 성장률 12.92%로 증가하여, 2024년에는 21억 5,352만 달러에 이를 것으로 전망됨
  - 하수용은 2019년 4억 6,468만 달러에서 연평균 성장률 15.44%로 증가하여, 2024년에는 9억 5.252만 달러에 이를 것으로 전망됨

#### **Market Size**

#### **UV Sterilizer Market**

- Expected to reach \$9.2 billion by 2026
- The spread of bacterial phobia due to COVID-19
- UV Sterilization Market Growth



Mr. Oh, Hwanjong

#### Founder and CEO

- Industrial Designer
   General Manager of Production and RnD
   Experience in projects to address drinking water hygiene issues in developing countries, including reconstruction projects in Ukraine
   Winner of the Korea Talent Award
- Invention of the First Cap-Type Uv Sterilizer
- Invention of the First Cap-Type Simple Water
  Purifier



Mr. Kim, Jangsaeng, Ph.D.

## Cofounder and COO

 - 25 years in International Development
 - Community Development in Uganda,
 D.R. Congo, Rwanda, Ethiopia, Ghana,
 Tanzania, Myanmar, Indonesia, Timor-Leste, Philippines



**Hyeyoung Cho / CTO** 

R&D based on basic research on water treatment/appropriate technology

Graduated from science high school, majoring in environmental engineering at Ewha Womans University Experience in research and development of non-small adsorption ceramic balls (CBF)



**Chul-Hong Kim / CTO** 

R&D based on water treatment /appropriate technology product development

Major in Computer Engineering at Ajou University Woori Bank's CBDC in charge of planning NFT platform

# [Cooperation Agreement and MOU]



Korea International

Cooperation Agency KOICA CTS SEED1 협약 체결















a professor at Seoul National University of Science and Technology **Nano IT Design Convergence Graduate School** 





- Dr. Lee -Filter Optimization **Coway Senior Researcher Water** Quality 20+ years of relevant experience



**Product Manufacturing** Dongsan Electronic Components Co., Ltd., Mold Manufacturing Injection and 30 years of experience in mass production of assembling

- Prof. Kim -









# 01 별첨, 기타자료