



WESTECH CHEMICALS SDN BHD

Recovery and Reclamation of Refrigerant

The Hotel Saujana , Malaysia

25th Sept 2018

Westech Chemicals. S/B – Noel Chong

WESTECH


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WESTECH CHEMICALS SDN BHD

Branches – Prai, Penang

HQ – Shah Alam , Selangor



Branches – Tmn Austin , Johor



Key Dealers– Sarawak , Sabah


WESTECH



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Not the quality.

The Chemours Company is proud to advance the Opteon[™] and Freon[™] brands and build on the legacy of DuPont.

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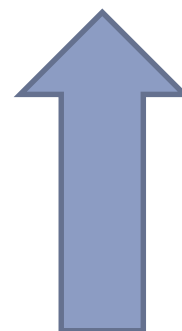
Opteon | **Freon**

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Chemours[™]



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HCFCs

Low ODP
High GWP



HFCs

Zero ODP
High GWP



HFOs

Zero ODP
Very Low GWP



**What is the definition of Refrigerant
Recovery ? Recycle ? Reclaim ?**

Recovery

To remove refrigerant in any condition from a system and store it in an external container

Recycle

To reduce contaminants in used refrigerants by separating oil, removing non-condensables and reducing moisture, acidity and particulate

Reclaim

To process used refrigerant to new product specifications.

Brief history of refrigerant reclamation by WCSB

- Westech invested the first refrigerant reclamation unit in year 2013 when there is a need for our clients to request for refrigerant “cleaning” services



- Until 2016 we had successfully reclaimed more than 6 ton of refrigerant (R22 and R134a)

In year 2017 : Awarded – MINI RECLAIM OPERATOR UNDER HPMP STAGE-1



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In year 2017 : Awarded – JICA Refrigerant Reclaim Project



**A Project by JICA & D.O.E Malaysia
(Ozone Unit) in collaboration with
Taiyo Shoji Co.,Ltd.
for the
Creation of Fluorocarbons Reclamation
Industry that Contributes to
Ozone Layer Protection**

**Recovery – Recycle – Reclaim – Reuse
Mar 2017 – Feb 2019**



Details of JICA Project

- 10 x RMO (Refrigerant Machine Operator)
- RMO received 1 x RRU + 5 x CYLD



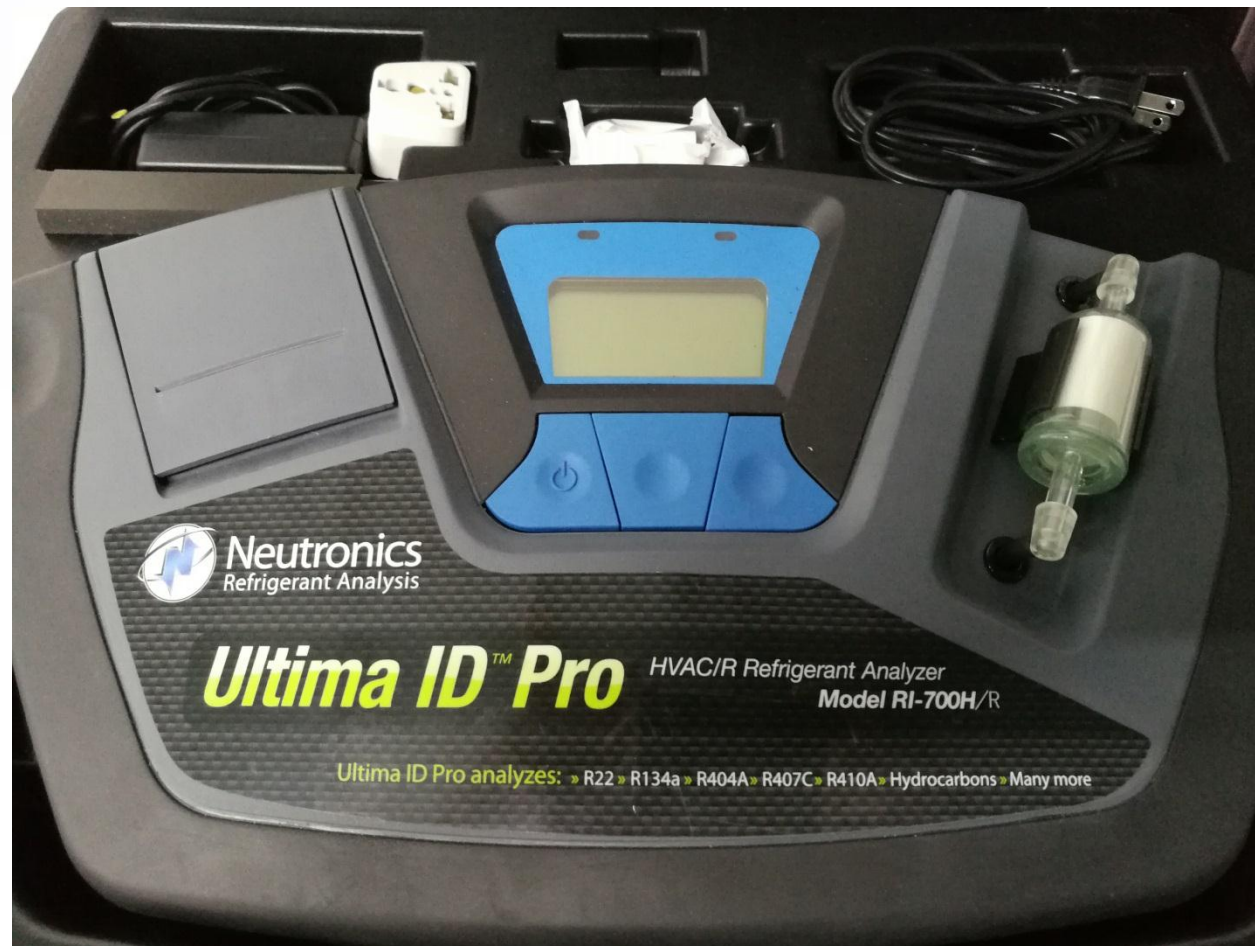
- 1 x RFO (Reclaim facilities Operator)
- RMO target Min 500kg or 12 time recovery Job
- Duration 1 year
- RM 4/kg incentive given to RMO
- RMO to buy back reclaim refrigerant at 2/3 market price
- Key objective is to develop sustainable refrigerant recovery , recycle , reclaim activity in Malaysia

Simple Process flow of refrigerant reclaim in JICA project

Photo of incoming cylinder contain used refrigerant collected by RMO.



Purity of Incoming refrigerant will first be analysed using portable refrigerant identifier.



Verify the weight of the refrigerant content



Copy for RFO

Form 2: Summary of Used Fluorocarbon Gas

N^o 0254

Recovery Entity Info

Company Name
(company chop)

SEIMEI ENG (M) SDN BHD

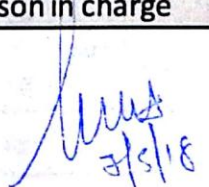
Date of Delivery
(DD/MM/YYYY)

7 / 05 / 18

Person in charge

Syawal

Cylinder No.	Refrigerant Type / Weight recorded by the recovery entity	Acknowledgement requested	Weight at reception
✓ K R V 0 1 9 7	<input checked="" type="checkbox"/> R22 <input type="checkbox"/> R134a <input type="checkbox"/> Other (15.1) / 20.8 kg	YES • NO	5.7 kg
✓ K R T 0 5 2 9	<input checked="" type="checkbox"/> R22 <input type="checkbox"/> R134a <input type="checkbox"/> Other () / 16.2 kg	YES • NO	5.8 kg
✓ H 5 N 0 7 8 1 3	<input checked="" type="checkbox"/> R22 <input type="checkbox"/> R134a <input checked="" type="checkbox"/> Other (10.1) / 17.0 kg	YES • NO	6.8 kg
✓ K R T 0 5 2 7	<input checked="" type="checkbox"/> R22 <input type="checkbox"/> R134a <input type="checkbox"/> Other () / 13.0 kg	YES • NO	2.6 kg
✓ H 5 N 1 2 2 1 2	<input checked="" type="checkbox"/> R22 <input type="checkbox"/> R134a <input checked="" type="checkbox"/> Other (10.1) / 17.0 kg	YES • NO	6.8 kg

Reclamation Entity Info	Received collection center	Person in charge
Westech Chemicals Sdn Bhd No5, Jalan Pelabur 23/1, 40300, Shah Alam, Selangor Darul Ehsan Tel: 03-5541 0612 Email: noelchong@tenco.com.my	<input checked="" type="checkbox"/> Shah Alam R22 → <input type="checkbox"/> Penang OTHER → <input type="checkbox"/> Johor Bahru	14.1 13.78 - (Signature)  27.88

This is a form of the "Pilot Project of Verification Survey with the Private Sector for Disseminating Japanese Technologies for Creation of Fluorocarbons Reclamation Industry that Contributes to Ozone Layer Protection". Email: <jica.freon@gmail.com>





Once tested result comply and weight being confirm, we will proceed to transfer content to 100kg capacity cylinder.



- **Cylinder with recovery refrigerant will be placed inside the heating chamber**

Empty vacuum cylinders will be placed inside the cooling chamber to “receive” reclaimed refrigerant during the process.





- Reclamation process will take minimum 8 – 10 hours (of more) to complete one cycle.

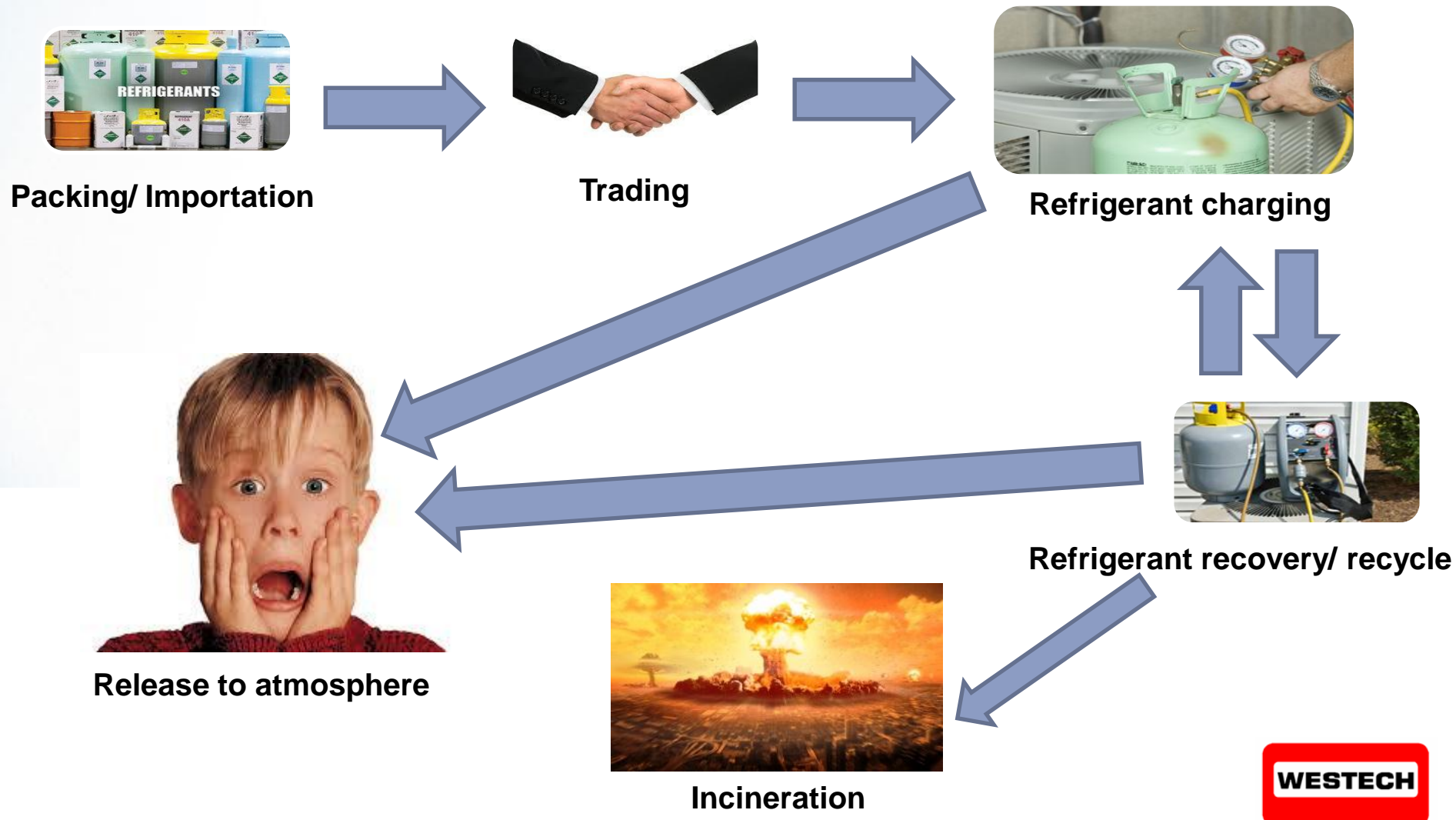
Reclaimed refrigerant will then proceed to conduct the purity , moisture , acid ,pressure , visual and other test to qualify the quality of the refrigerant.



Visual comparison of refrigerant before and after reclaimed



Normal refrigerant life cycle



Refrigerant life cycle management



Visit by DOE official to audit our refrigerant reclamation process – Oct 2017 & Jan 2018



Taiyo Shoji – Nagoya Plant visit by Malaysia delegation





Green initiative: An employee at Westech Chemicals Sdn Bhd's reclamation facility transferring recycled fluorocarbons into smaller cylinders as part of the pilot project, which enables users to sell the collected gases and buy back the recycled and reclaimed gas at two-thirds of the market price. — SYED AZAMUDDEN/The Star

Clearing the air

The Department of Environment has teamed up with a Japanese agency for a pilot project to recover, recycle, reclaim and reuse fluorocarbon gases emitted from heating, ventilation, air conditioning and refrigeration. >2&3

Updated result

Reclaim approx. 2500kg refrigerant = 4,000 tonnes CO2

1 mature tree absorb approx 22kg CO2 per year

4000 tonnes = 181,818 tree absorption value

Malaysia annual import 12000 tonnes refrigerant

Percentage we can achieve on reclaim quantity?

Together we can make the world better ☺

Sekian ,Terima Kasih 😊

