



Mark Miller has been active within the Montreal Protocol community for nearly 30 years. He was instrumental in coordinating a provincial government (Canada) plan to address ozone depleting substances and halocarbons, including the initial regulatory framework and certification training plan for industry and government.

He has attended Montreal Protocol meetings, hosted MP side-event, been a valuable resource for NGOs, UNEP DTIE and other stakeholders through the journey to safeguard our ozone layer and climate systems. Mark was a participant on a World Bank Mission to China phasing-out halons and hosted NOU representatives on capacity building study tours to Manitoba (Canada).

Mr. Mark Miller

Executive Director

The Manitoba Ozone Protection Industry Association (MOPIA)

WEBINAR SERIES

CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF- LIFE ODS AND HFC

Coordination of Cooperative Servicing Sector Action on EOL ODS/HFC Management: A Case Study from Canada

Mark Miller
Executive Director
The Manitoba Ozone Protection
Industry Association (MOPIA)



El ambiente
es de todos

Minambiente



UNIDAD TÉCNICA OZONO
Colombia



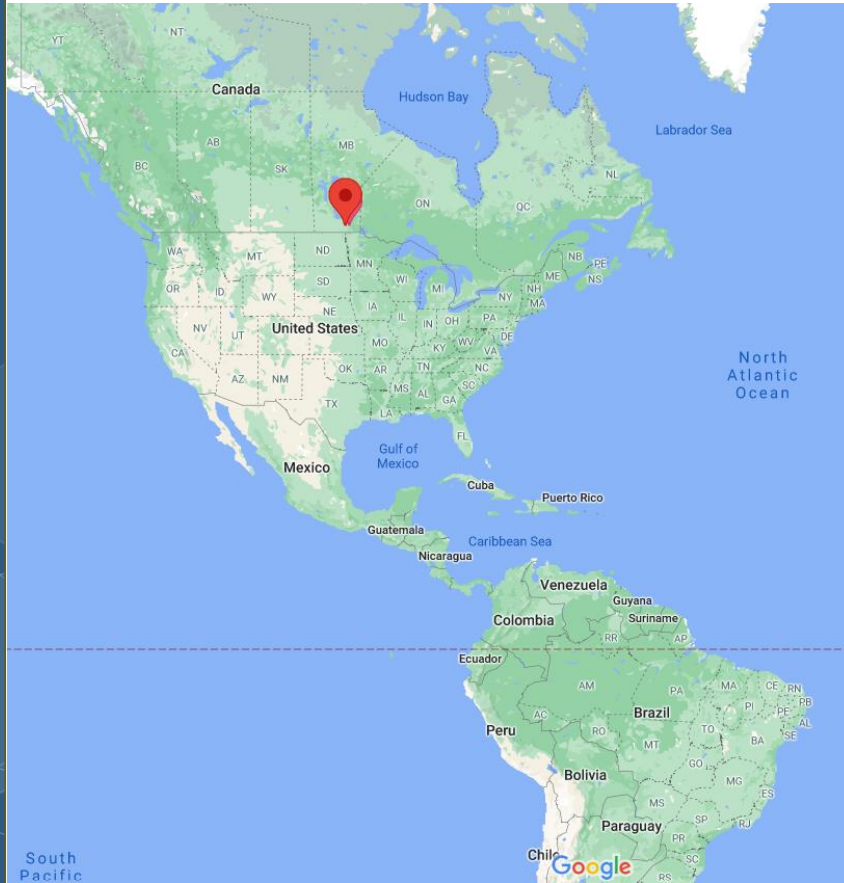
This webinar is being organized within the
framework of a project funded by US EPA

CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF- LIFE ODS AND HFC

Located in the center of
Canada

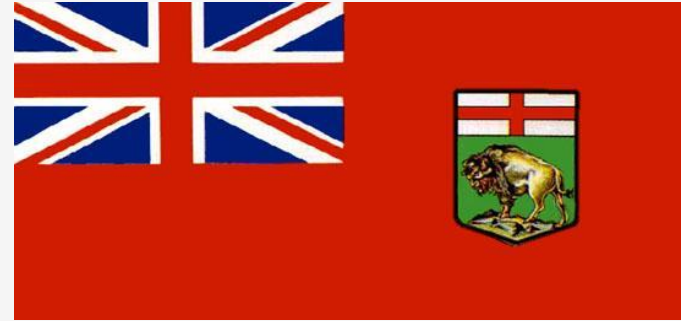
Population of 1,200,000

Production of Money,
Pharmaceuticals, buses



Presentation Overview

- MOPIA Model highlighted
- Stakeholder /Industry Participation
- Partnership with Government
- Programs and Services
- Certification Training
- Stewardship (EPR) of Products Containing regulated refrigerants



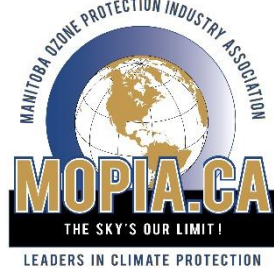
MOPIA is a not for profit organization

- No government funding is provided.
- MOPIA Board members are volunteers from the various service industries (air conditioning, foam, refrigeration, Appliance sectors)
- Government Regulation appointed MOPIA as the governing and administrative body
- Enforcement of the regulation is done by government Environment officers

MOPIA



LEADERS IN CLIMATE PROTECTION



CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF- LIFE ODS AND HFC

MOPIA began in 1994 by volunteers from the A/C and various other ODS and environmental sectors. Currently have 8 paid staff members.

MOPIA'S TEAM



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Diverse Stakeholders Came Together to Address Pathway Forward

- Foam
 - Methyl bromide
 - Halon
 - Appliances
 - HVACR/Air Conditioning
 - Sterilants
- 1st priority was to determine voluntary or a **regulatory** approach
 - 2nd priority was how to implement
 - 3rd buy-in/support of industry sectors affected
 - 4th How/who to implement and costs
 - 5th End-of-life ODS and HFC stewardship

Timeline since 1990

- **1990 Manitoba ODS Act**
 - Enabling legislation to meet commitments under Montreal Protocol
- **1992 Manitoba ODS Regulation enacted**
- **1994 New/original Manitoba ODS Halocarbon Regulation (MR 103/94)**
 - Manitoba a national leader in stratospheric ozone layer protection
 - MOPIA appointed to provide atmospheric protection information and technical service resources
 - MOPIA retains fees to administer and manage Manitoba's program
- **1999 Manitoba ODS Act amended**
 - Enabling legislation to allow for the regulation of "replacement products" [i.e. HFCs (GHGs)]
- **2005 Amendments to the ODS Regulation (M.R. 178/05)**
 - Amendments consistent with Canada's NAP to phase-out CFCs and halons
 - Regulation name change to "Ozone Depleting Substances and Other Halocarbons Regulation"
- **2021 Amendment proposed to strengthen the Regulation and Environmentally sound management of end-of-Life ODS and HFCs**

Tight controls, data collection and penalties/fines

- Regulation requires:
- All persons purchasing and servicing ODS equipment be certified
- MOPIA has trained/oversaw over 18,000 being certified to date. The training is about 6 hours in length
- Penalties for non compliance are up to \$50,000 CAD/\$40,000 USD and up to 6 months in prison (among toughest penalties known)
- All companies purchasing regulated refrigerants and equipment require a permit issued by MOPIA
- All leaks over 10 kg be reported
- All refrigerant use be recorded and submitted once per year
- **Sellers of refrigerant must accept back refrigerant from purchasers (contaminated, surplus) and are responsible for its disposal**

Certification Training

- Environmental Awareness
- Ozone and Climate Change
- On-line, correspondence self-study and in-classroom
- Regulatory Awareness
- Proper recovery and record keeping



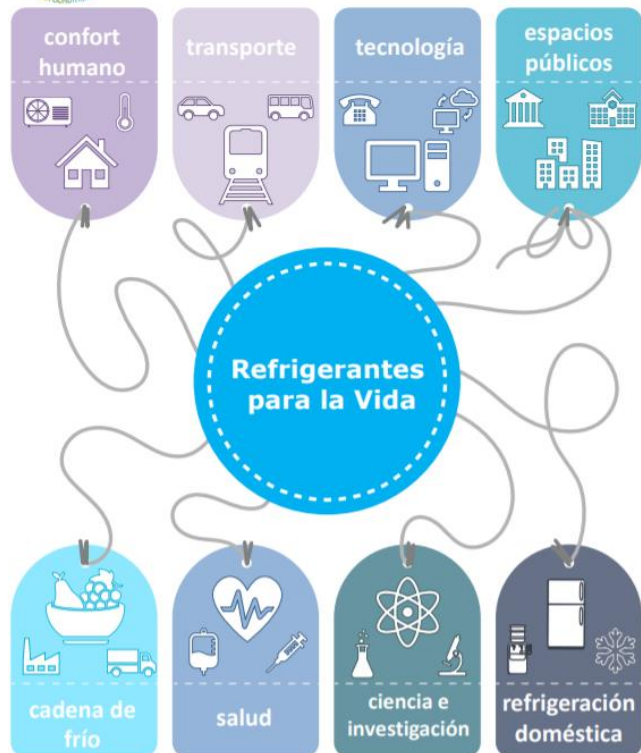
Natural Refrigerants Training

- MOPIA has a new partnership with Centro Studi Galileo, Milan, Italy and UK Institute of Refrigeration
- Hydrocarbons, carbon dioxide, ammonia and others.



Día Mundial de la Refrigeración – 26 de junio del 2019

#Refrigerants4Life



Contexto

- Los refrigeradores domésticos consumen 65% menos energía que 15 años atrás¹.
- 4 millones de camiones refrigerados y 600 millones de m³ de almacenes refrigerados ayudan a conservar 400 millones de toneladas de comida cada año².
- Más de 2 mil millones de refrigeradores y congeladores (170 millones producidos anualmente) consumiendo el 4% de la energía global³.
- 5.6 mil millones de aires acondicionados estarán en uso para el año 2050, triplicando la demanda energética del sector.



Cuestiones ambientales y de seguridad

- La mayoría de los refrigerantes disponibles comercialmente contribuyen al calentamiento global y/o al agotamiento del ozono si se liberan.
- Los nuevos equipos energéticamente eficientes, pueden ahorrar dinero a los propietarios y reducir las emisiones de gases de efecto invernadero.
- Hay refrigerantes alternativos disponibles, pero algunos son inflamables, tienen alta presión o son tóxicos, por lo que requieren un manejo adecuado.
- El funcionamiento eficiente y la gestión en la aplicación de la cadena de frío frena la pérdida de alimentos y mejora la seguridad alimentaria.



¿Qué acción se necesita?

- La selección cuidadosa del refrigerante, el diseño del sistema y el manejo del funcionamiento pueden reducir las emisiones de refrigerante y ahorrar costos de energía.
- Seleccionar los refrigerantes con menor potencial de calentamiento atmosférico para nuevos sistemas, cuando sea posible, y promover las investigaciones.
- Promover la recuperación, reutilización, regeneración de refrigerantes y prohibir la liberación a la atmósfera.
- El uso de empresas e individuos certificados para garantizar buenas prácticas y servicios, y el uso seguro de refrigerantes inflamables.

¹IIR, "29th Informative Note on Refrigeration Technologies: The Role of Refrigeration," 2015. ²UN Environment, IIR, "Cold Chain Technology Brief: Commercial, Professional, and Domestic Refrigeration" 2018. ³UN Environment, "Refrigeration, Air-Conditioning, and Heat Pumps Technical Options Committee: 2018 Assessment Report,"

Refrigerants, Naturally!

Refrigerants, Naturally! es una iniciativa global de múltiples partes interesadas comprometidas con la lucha contra el cambio climático y el agotamiento de la capa de ozono. Proporciona una plataforma para que los agentes de la industria apliquen cambios positivos tanto en el ámbito de los refrigerantes naturales como en el de la eficiencia energética.

Las organizaciones y las personas que deseen apoyar activamente el uso de refrigerantes naturales pueden hacerse miembros de la Asociación de Refrigerantes Naturales.

Refrigerants, Naturally! agradece la participación activa de comercios minoristas de alimentos, cadenas de supermercados, empresas de servicios de RACBC, entidades formativas, proveedores de sistemas y componentes, ONG y otras partes interesadas que deseen estimular la transición a la climatización ecológica.

Visite el sitio internet de la Asociación de Refrigerants, Naturally!





SHOW IT SEE IT IT'S THE LAW!

This wallet size card is mandatory for all persons servicing or purchasing regulated refrigerant(s), part(s) and equipment. The card is issued annually and is needed when purchasing refrigerant or parts on the gas side of new or used refrigeration or air conditioning systems. Companies with a valid Secondary Distributor (SD) Permit may also purchase regulated products.

No company S.D. Permit? No card? NO SALE!

No Certification Card or Secondary Distributor Permit means - No Sale!! Cards and Permits are not transferable.

Tough Penalties

Penalties exist for anyone purchasing and/or selling regulated products without a valid Certification Card. You may verify a card's validity by contacting MOPIA.

Wholesalers & Distributors

Anyone selling regulated new or used air conditioning and refrigeration equipment, parts and/or refrigerant are obligated to see and record a MB-number off a valid Certification Card.



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CLOSING THE LOOP: ENVIRONMENTALLY SOUND MANAGEMENT OF END-OF-LIFE ODS AND HFC



**MOPIA REGULATED PRODUCTS
PURCHASER BULLETIN
SPRING, SUMMER, FALL 2010**

Regulated Refrigerants include CFCs, HCFCs and HFCs

The Montreal ozone Depleting Substances and Other Halocarbons Regulation (ESDA) lists all regulated refrigerants. They include CFCs, HCFCs and HFCs, such as R134A, R123, R22, R410, R607 and their various blends. Only persons with a valid Manitoba certification card may handle (i.e. charge, evacuate or A/C system) these.

Hydrocarbons (propane/butane type products) are not regulated under the Regulation but must not be added directly to a unit that has a regulated refrigerant (poolable are illegal).

Refrigerant containers must be refillable (may have a core/ deposit charged by the wholesaler) size compliant meeting Transport Canada (i.e. within hydrostatic test date) and Environment Canada specifications.

For more details visit: www.to.gov.sing.fg/mso-cylinder-regoncytinders-473.html



All Parts (new or used) Connected to the Closed Refrigerant Loop are Regulated*

**Including the portions and servicing to also regulated*

These products include but are not limited to items such as:

- Compressors
- Hoses
- Lines
- Roof-Top Units
- Split Systems
- Evaporators
- Condensers
- Filter Dryers

And anything else whereby refrigerant passes through.




Who can purchase Regulated Refrigerant(s) and A/C Equipment & Parts?

Regulated products include nearly all refrigerants (including CFCs, HCFCs & HFCs), any service equipment, any hoses, any gauges, any containers and any new or used equipment or components that make up or attach to a closed refrigerant loop.




Significant financial penalties

It is a violation to sell any regulated product to a person or company who does not have a SD permit number or to a person who is not certified in the Province of Manitoba. If you are a seller of any regulated products (anything attached to the closed refrigerant loop or refrigerant*), you must record (verify) when you sell the products to (including the persons name and certification number or company SD number). Significant penalties exist for those who contravene this regulatory compliance responsibility! These include fines up to \$10,000 for persons, plus jail time and up to \$1 million for corporations and restitution, compensation and other fines as the judge warrants. Compliance enforcement does happen across Manitoba.

See: <http://www.gov.mb.ca/sd/evrprograms/airqual/tyindex.html>
<http://gov.mb.ca/sd/evr/evr.html>



This Regulated Products Bulletin was prepared for you by MOPIA. Contact us for more info: www.mopla.ca • email: mopla@mytel.net or 204.358.2222 / 1.888.667.4203
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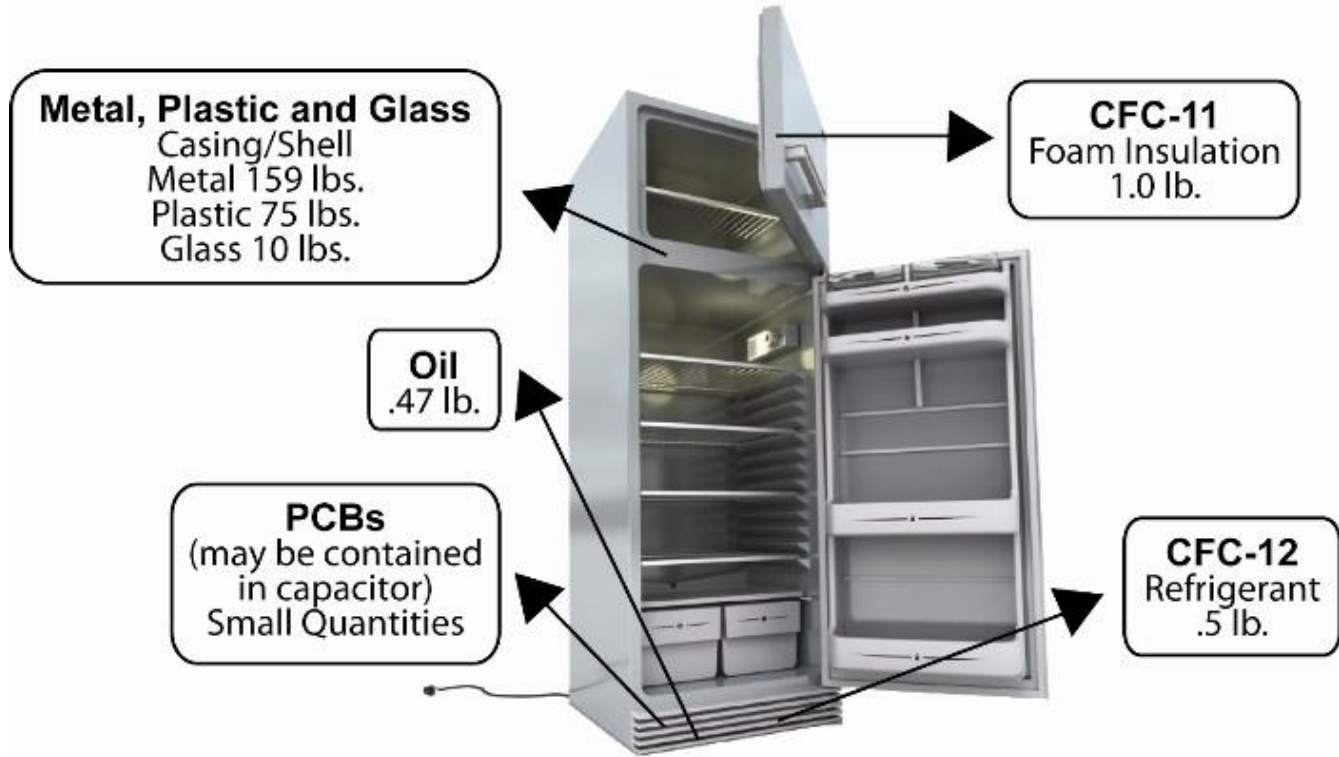


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Participation by Industry and Service Sectors

- \$25 annual fee for service technicians
- \$50 fee for companies purchasing regulated products
- \$1.5/kg levy / fee on the purchase of new refrigerants funds the disposal process
- \$25-50 fee on the purchase of new appliances

**CLOSING THE LOOP:
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*An improperly recycled refrigerator causes as much damage as
3 tonnes of CO₂ released into the atmosphere.*



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MOPIA is working
remote
Indigenous
communities to
recover
refrigerant from
abandoned and
non working
appliances and
cars

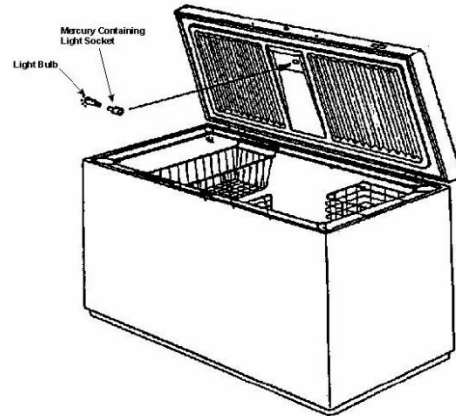
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Mercury disposal



- Collection and destruction





Automobiles

- Mandatory to recover the refrigerant from all cars/vehicles prior to scraping or disassembling
- Government has contracted a few companies to extract the refrigerant from mobile A/C units
- Cost to recover each vehicle refrigerant is approximately \$50
- The refrigerant is typically reused in other vehicles A/C



Summary

- Decide if government will fund ODS management program or if industry should be regulated (pollution prevention plan) to take action
- Industry will not volunteer to manage the end-of-life ODS and HFCs without some direction or regulation by government. The refrigerant industry has not shown leadership without pressure from government.

MOPIA may be able to assist

- Review current program
- Coordinate and develop the regulatory strategy for industry to participate
- Source and determine efficient logistics for the safe management of end-of-life ODS and HFCs



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Thanks for your attention

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