



## OzonAction Newsletter



### Products and Technologies Covered in the OzonAction Newsletter

#### Introduction

Each issue of the quarterly *OzonAction* newsletter carries articles describing new technologies, products and services designed to assist with the [phase-out of ozone depleting substances](#) (ODS). Each article also provides fax, telephone or email addresses of contacts who can provide you with additional information about those technologies.

As a service to [developing countries](#), the OzonAction Programme publishes the index of the commercially available technologies and products covered in the previous years issues. This index covers newsletter issues 1 to 17.

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#### Foams

- Capaphen TM (wall insulation product), Cape Insulation, South Africa. (OAN No. 5)
- Formacel TM (CFC-free foam expansion agents), Dupont, United States. Fax : (1) 302 7744 2370 (OAN No. 5)
- A45 and A55 machines (recovery of CFCs in foams), Adelman's, Germany. Fax : (49) 93 53 79 03 77 (OAN No. 7)
- L&E 15000 machine (recovery of CFCs in foams from materials that are destined to be destroyed), Miljoteknik's, Denmark. Fax : (45) 86 99 95 06 (OAN No. 7)
- 100% CO2 blowing agent technology (for production of polystyrene food packaging foam), Dow, United States Fax: (1) 517 638 9752 (OAN No. 9)
- CarDio TM (foam-blowing alternative technology), Cannon, Italy (OAN No. 9)
- Autofroth TM (rigid flotation foams for marine use), BASF, United States Fax: (1) 313 591 6620 (OAN No. 12)
- Foam-blowing technology (pentane-based formulation), Baxenden Scandinavia, Denmark Fax: (45) 53 63 49 66 (OAN No. 12)
- Electroset technology (technology for foam blowing), US Navy, United States Fax: (1) 410 293 2561 (OAN No. 13)
- Fire-resistant insulation foam (for space-filling), Polypag, Switzerland Fax: (41) 49 71 756 142 (OAN No. 13)
- Cannoxide TM (liquid CO2 for blowing flexible PUR moulded foam) Cannon, Germany Fax: (49) 6131 883547 (OAN No. 15)
- Formacel TM Z-4 (foam blowing agent based on HFC-134a) DuPont, USA Fax: (1) 302 774 2370 (OAN No. 16)
- Biodegradable substitute used for styrofoam made from straw and grass Chinese National Environmental Protection Agency, Beijing, China Fax: (861) 832 8013 (OAN No. 17)

#### Aerosols



- Dymel (chlorine-free propellant consisting of DME-152a blend) Polypag, Germany Fax: (41) 49 71 756 142 (OAN No. 14)
- Novospray actuator (spring-operated activator) Novospray, Leichtenstein Fax: (41) 66 56 84 21 (OAN No. 15)
- Refill Pentisol Spray System (aerosol cans that can be refilled with products using a hand pump) Pentisol Ky, Finland Fax: (358) 0291 0945 (OAN No. 16)
- Airomir TM (CFC-free metered dose inhalers) 3M Health Care, United Kingdom Fax: (44 1 509) 61 33 26 (OAN No. 17)
- HFA 227 Pharma (metered dose inhalers) Hoechst, Germany Fax: (49) 69 331 507 (OAN No. 17)
- Bivacyn TM (pentane-based propellant), Lek Pharmaceuticals, Slovenia Fax: (386) 61 737 244 (OAN No. 13)
- Transportable Hydrocarbon Filling Rooms, KP Aerofill, United Kingdom Fax: (44) 81 561 3308 (OAN No. 12)
- Turbihaler TM (CFC-free, ant asthmatic spray), Astra, France (OAN No. 9)




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## Halons

- Argonite TM (fire extinguishing product base on a nitrogen/argon blend), Ginge-Kerr as, Denmark Fax: (45) 36 77 22 31 (OAN No. 7)
- Cold Fire TM (ODS-free fire extinguisher using a surfactant), FireFreeze, United States Fax: (1) 201 627 2982 (OAN No. 12)
- Defender 2000 TM Model C-400 (recovery and recycling device for halon-1211 and 1301), FRC, USA Fax: (1) 419 867 3279 (OAN No. 9)
- Fe-13 TM (replacement for halon 1301) Du Pont, United States Fax: (1) 302 774 2370 (OAN No. 9)
- Fine Water Spray System TM (fire extinguishing product), Ginge-Kerr as Denmark Fax: (45) 36 77 22 31 (OAN No. 7)
- HAL TM (automatic halon recycler for servicing fire extinguishers), Team Aer Lingus, Dublin, Ireland (OAN No. 3)
- Portable Fire Extinguisher (use of water, dry powder, foam spray and CO2), Chubb Fire, United States (OAN No. 5)
- Pyro 2000 TM (foam fire fighting technology), United States Fax: (1) 713 777 6406 (OAN No. 11)
- Recycling equipment for halon -1301 (three separate modular units for pumping), Getz Manufacturing, United States Tel: (1) 309 674 1723 (OAN No. 11)
- Triodine TM (drop-in halon replacement), Pacific Scientific, United States Fax: (1) 818 359 7013 (OAN No. 13)
- HFC-125 (replacement for halon-1301) (OAN No. 14)
- Halotton I (substitute for halon-1211 American Pacific Corporation, USA Fax: (1) 702 735 4876 (OAN No. 15)
- Inert gas system (replacement for halon-1301) US Navy CFC and Halon Clearinghouse USA Fax: (1) 703 769 1885 (OAN No. 17)




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## Destruction of ODS

- Plascon TM (plasma arc destruction technology), SRL Plasma, Australia Fax: (61) 3 726 8052 (OAN No. 10)




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## Methyl Bromide

- Basamid Granular TM (meet fugigation requirements), BASF, United States Fax: (1) 313 591 6620 (OAN No. 4)
- Bromosorb TM (a recovery equipment based on zeolite molecular sieve in mills fumigation with methyl bromide), Canada Fax: (1) 416 599 5178 (OAN No. 12)
- Controlled atmospheres (a technique that controls temperature and atmosphere composition inside sealed shipping containers) Defense Logistics Agency, USA Fax: (1)

- 804 279 4970 (OAN No. 15)
- Carbonyl sulphide (methyl bromide substitutes as fumigant) CSIRO, Australia Fax: (616) 246 1202 (OAN No. 16)
- Heat and inert gas (methyl bromide replacement) Thermo Lignum UK Ltd., Fax: (44 181) 964 2969 (OAN No. 17)
- Methyl iodide (methyl bromide alternative) US Environmental Protection Agency Fax: (1) 202 233 9665 (OAN No. 17)



## Refrigeration

### Air Conditioning and Heat Pumps

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- Air desiccation/rehumidification units (compressors-less air-conditioning units), ICC Technologies/Engelhard Corp. United States Albers air-Conditioning Corp. United States Fax: (1) 602 730 1870 British Gas plc, Saudi Arabia (OAN No. 7)
- Conventional air-cycle air conditioning system, Entropy Systems, United States Fax: (1) 216 747 5626 (OAN No. 13)
- Desert Cool TM (gas-powered air cooling systems), ICC Technology and Engelhardt Corporation, United States (OAN No.10)
- FX 20 TM (HFC blend substitute for HCFC-22), Elf Atochem, United States Fax: (1) 800 835 2916 (OAN No. 10)
- Gas-powered air conditioning system (based on liquid/desiccant phases), Albers Air-Conditioning Corp., United States Fax: (1) 602 730 1870 (OAN No. 10)
- Millenium TM (new scroll compressor), Carrier Corporation, USA Fax: (1) 315 432 3503 (OAN No. 11)
- Sensible Cooling Process TM (evaporative cooling equipment), Di Peri, United States Tel: (1) 818 885 0011 (OAN No. 9)
- Weather Maker TM (domestic air conditioning equipment using HFC-134a), Carrier Corporation, United States Fax: (1) 315 432 3503 (OAN No. 11)
- Window air conditioners using HFC-134a, Carrier Corporation, United States Fax: (1) 315 432 3503 (OAN No. 13)
- HFC-236fa (potential replacement for CFC-114 in ships) US Navy Fax: (1) 703 602 9025 ext 243 (OAN No. 14)
- Tierra TM series 48/50 GI (rooftop air conditioner using R-407C) Carrier Corporation, USA Fax: (1) 315 432 5303 (OAN No.14)
- Desert Breeze system (electric, desiccant air conditioning system) (OAN No. 14)
- KLEA TM 407C (alternative to HCFC-22 in air conditioning systems ICI Klea, USA Fax: (1) 302 887 7706 (OAN No. 15)
- Orbital Vane TM (vehicle air conditioner Compressor) DynEco Corporation, Florida Fax: (1) 407 639 0333 (OAN No. 16)



## Cold Storage

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- Refrigeration equipment using glycoled water (enables to reach storage temperature of -22 degrees centigrade), MC International, France Fax: (33 1) 47 12 93 63 (OAN No. 12)



## Commercial Refrigeration

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- AZ-50 TM (a refrigerant blend (HFC-125 and HFC-134a) used as replacement of R-502), Allied Signal, United States Fax: (1) 201 455 3334 (OAN No. 12)
- Discus TM (semi-hermetic compressors that accept HP-62 TM; supermarket applications), Copeland Corporation, United States Fax: (1) 513 498 3334 (OAN No. 7 & No. 10)
- Genetron AZ-50 TM (a refrigerant blend (HFC-125 and HFC-143a), Copeland Corporation, United States Fax: (1) 513 498 3334 (OAN No. 10 & No. 12)
- Earth Wise TM chillers (use HCFC-123) Trane, USA Fax: (1) 608 787 2000 (OAN No. 14)
- Air-cooled screw chiller using ammonia York International Corporation, USA Fax: (1) 708 541 9615 (OAN No. 15)

- Hydrofluoroethers (EFE) CFC refrigerant Substitute 3M USA Fax: (1) 302 887 7706 (OAN No. 16)



### Domestic Refrigeration

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- CFC-free refrigeration (Greenfreeze fridge), DKK. Scharfenstein, Germany (OAN No. 5)
- ER 3016c TM (CFC-free domestic refrigerator using HFC-134a), Electrolux, Sweden Fax: (46) 856 92 61 (OAN No. 6)
- Isobutane domestic refrigerator, Electrolux, Sweden Fax: (46) 856 92 61 (OAN No. 13)
- HFC-134a refrigerator compressors, Mabe Sanyo Compressors, Japan - Mexico Fax: (81) 3 3837 6381 (OAN No. 12)
- KDR 3700 TM (domestic refrigerators), Bosch-Siemens, Germany (OAN No. 10)
- Small-sized solar refrigerator (based on zeolite adsorption and use of external Waterloo), Zeopower Co., United States Fax: (1) 617 235 4254 (OAN No. 12)
- Vacuum insulation panels and non-CFC urethane foam (used in domestic refrigerator), Sharp, Japan Fax: (81) 6 628 1667 (OAN No. 13)
- Super Efficient Refrigerator Program (SERP) (using HCFC-134a and foam blown with HCFC-141b) Whirlpool, USA Fax: (1) 616 923 3785 (OAN No. 16)
- Vapour compression system using a mixture of refrigerants for small to medium-scale air conditioning British Technology Group, USA Fax: (1) 610 278 1605 (OAN No. 15)
- Advanced Thermoelectric Refrigerator (using heat transfer to a salt mixture that circulates through the refrigerator cabinet to provide uniform temperatures) Owens Corning Fiberglass Corporation, Marlow Industries Incorporated and Oceaneering International, Inc. Fax: (1) 419 248 5337 (OAN 15)



### Industrial Refrigeration

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- Zeoroll (water-zeolite refrigeration units), Ecozeo S.A., France Fax: (33 1) 43 58 14 15 (OAN No. 6)
- Scroll compressors using ammonia, Fromfroid, France Fax: (33) 21 31 46 15 (OAN No. 13)



### Recovery of Refrigerants

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- Ariazone TM Talarico (small-sized and light equipment for R & R for the Air-conditioning), Australia (OAN No. 5)
- Blue Bottle TM (CFC reclamation facility), Halozone Corp., Canada Fax: (1) 416 491 2757 (OAN No. 7)
- Port-Ozone TM RSI (on-site system for recovery and recycling refrigerants and design for recharging equipment), United States (OAN No. 5)
- Skye TM (portable devices to recover and recycle refrigerants), Australia (OAN No. 5)



### Refrigerant Recovery and Recycling

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- Zugi Beast TM system (recovery and recycling machine) Hudson Technologies, USA Fax: (1) 203 622 1723 (OAN No. 14)
- Fred TM (For Refrigerant Emission Detection System) Synertec Systems, Inc. Boulder, Colorado USA Fax: (1) 303 444 6908 (OAN No. 15)
- RMS TM (Refrigerant Management System; designed for high efficiency pruging and refrigerant recovery); EnviroPurge TM system Sonic Environmental Systems, Inc. USA Fax: (1) 201 882 1486 (OAN No. 15)
- Sound waves to destroy CFCs Research Institute for Advanced Science and Technology, Osaka University, Japan Fax: (81) 6 877 511 (OAN No. 16)



## Several

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- Ammonia chiller of 5,400 kW, Metal, France Fax:(33 1) 40 31 28 80 (OAN No. 13)
- Convertible TM (condensing units with power ranging from 0.7 to 3.6 kW: using R-404a, a three component HFC blend and the compressor Copelaweld TM), Copeland corp, United States Fax:(1) 513 498 3334 (OAN No. 13)
- Emkarate RLE and Embarox RL TM (lubricants for alternative refrigerants) ICI, United States Fax: (1) 302 887 7706 (OAN No. 5 & No. 9)
- MP-39 TM (alternative refrigerant: a blend of HCFC-22, HCFC-124 and HFC-152a), Du Pont, United States Fax: (1) 302 774 2370 (OAN No. 9)
- Solkane AZ 50 TM (drop-in substitute for R-502 (a blend of HCFC-22 and CFC-115), Solvay Co, France Fax (33) 1 407 8000 (OAN No. 11)
- Suva HP-62 TM (alternative refrigerant to R-502 (blend of HFC-125, HFC-134a and HFC-143a), Du Pont United States Fax: (1) 302 774 2370 (OAN No. 7)
- Suva 9100 TM (alternative refrigerant to HCFC-22 (a near-azeotrope mixture of HFC-125 and HFC-32), Du Pont Switzerland Fax: (41) 22 717 60 77 (OAN No. 13)
- Helium-based cooling system for conventional refrigeration systems in homes and vehicles Lawrence Livermore Laboratory, USA Fax: (1) 510 423 2224 (OAN No. 16)



## Solvents

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- Aqueous inorganic alkaline solvent (for cleaning and testing shipboard oxygen gas piping systems), US Navy United States Fax: (1) 703 602 6808 (OAN No. 13)
- Arklon TM (a diluent grade containing 40% less CFC-113), Cleanseal TM (semi-aqueous solvents), Cleanzone TM (semi- aqueous solvents) ICI, United States-United Kingdom Fax: (1) 302 887 7706 & (44) 928 511 418 (OAN No. 3)
- Actrel R (substitute), Exxon Chemical, United States Fax: (1) 713 870 6955 (OAN No. 7)
- Axarel TM (cleaning agents substitutes), Du Pont, United States Fax: (1) 302 774 2370 (OAN No. 5)
- Axarel TM (substitute), Promosol, France Fax: (33) 1 48 81 24 40 (OAN No. 7)
- Controlled Emulsion Cleaning TM (closed-loop cleaning technology) Electronics Control Design, United States Fax: (1) 503 659 6100 (OAN No. 11)
- Dry-Plasma cleaning equipment (using electrically excited gas molecules), Gasonics/IPC, United States Fax: (1) 215 628 8280 (OAN No. 11)
- Electro-Wash R 2000 (CFC-free aerosol Degreaser), Chemtronics, United states (OAN No. 9)
- FMS-2004 TM (CFC-free metal cleaning solvent), General Dynamics, Fort Worth Division United States (OAN No. 4)
- HF1 89 TM (a compound, extracted from lemons, developed for military purposes), Hugues Aircraft, United States (OAN No. 10)
- High pressure steam technology (for de-waxing of aircraft elements-alternative to 1,1,1 trichloroethane), D.C. Cooper Corp., United States Fax: (1) 312 427 9461 (OAN No. 10)
- Iridia RM (substitute), Elf Atochem, France Fax: (33) 1 49 00 83 96 (OAN No. 7)
- LSF 2000 TM (CFC-free spray fluxer), AT&T, United States (OAN No. 9)
- Microcel TM (centrifugal cleaning and rinsing device), ACCEL, United States Fax: (1) 214 424 7526 (OAN No. 10)
- N-methylpyrrolidone (NMP) (highly-polar solvent: substitute for 1,1,1-trichloroethane, methylene chloride and other chlorinated solvents) BASF Corp., United States Fax: (1) 313 591 6620 (OAN No. 12)
- Omni-Clean TM (substitute), Delta-Omega, United States Fax: (1) 318 367 6463 (OAN No. 7)
- Planetelf ACD 32 R (polyolesther lubricant compatible with HFC-134a), Elf Atochem, France Fax: (33) 1 49 00 83 96 (OAN No. 8)
- Promoclean TM (substitute) Promosol, France Fax: (33) 1 48 81 24 40 (OAN No. 7)
- Re-Entry TM (chlorine-free biodegradable solvents) Envirosolv, United States Fax: (1) 904 724 2508 (OAN No. 5)
- Solderel TM (no-clean solder paste), Du Pont, United States Fax: (1) 302 774 2370 (OAN No. 5)
- Techno Care TM (replacement of CFC-113 and chlorine-based solvents), Toshiba, Japan (OAN No. 4)
- CFC-free cleaning agent based on glyco-ether compound Matsushita, USA Fax: (1) 201 348 7000 (OAN No. 14)
- Aquaquick 2000 (degreasing agent) Ribaro BV, the Netherlands Fax: (12) 824 2050/9 (OAN No. 14)

- Positron TM (hydrocarbon/terpene blend solvent) Ecolink, USA Fax: (1) 404 621 8245 (OAN No. 15)
- Pine Alpha ST-100s (semi-aqueous cleaning agent substitute for CFC-113) Arakawa Chemical, Industries, Japan Fax: (6) 209 8542 (OAN No. 15)
- Genesolv TM (substitute) Allied Signal, USA Fax: (1) 201 455 3334 (OAN No. 16)
- Biosane T212 (substitute for 1,1,1-trichloroethane) Chimie Innovations & Technologies (CIT Diffusion), France Fax: (33) 1 90 92 32 32 (OAN No.16)
- Vertrel XF TM (substitute) DuPont, USA Fax: (1) 302 774 2370 (OAN No.16)

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