VATIS Update Ozone Layer Protection . Jan-Feb 2006

Contents

TECH EVENTS

THE SCIENCE OF OZONE LAYER

AURA reports on ozone hole

In the United States, using data from NASAs AURA satellite, researchers have determined that the seasonal ozone hole developed over Antarctica last year was smaller than those in previous years. The 2005 assessment of the size and thickness of the ozone layer is the first based on observations from the Ozone Monitoring Instrument on board the agencys Aura spacecraft, which was launched in 2004. The 2005 ozone hole measured 15.12 million square kilometres at its peak between September and mid-October, which was slightly larger than the previous years peak. Scientists also monitor the level of ozone present in the atmosphere from the ground to space. The thickness of the Antarctic ozone layer was the third highest of the last decade, as measured by the lowest reading recorded during the year. The level was 102 Dobson Units.

The Ozone Monitoring Instrument is the latest in a series of ozone-observing instruments flown by NASA over the last two decades. This instrument provides a more detailed view of ozone and is also able to monitor chemicals involved in ozone destruction. The instrument is a contribution to the mission from the Netherlands Agency for Aerospace Programmes in collaboration with the Finnish Meteorological Institute. Royal Netherlands Meteorological Institute is the principal investigator on the instrument.

Website: www.sciencedaily.com

Hole over Antarctica healing

Twenty years after the discovery of the Antarctic ozone hole startled the world, scientists say it may take longer to heal than previously thought. A new computer simulation suggests that the hole over the South Pole may not mend for 60 years. Another study shows significant levels of ozone-destroying chemicals still being released in the United States and Canada. According to Mr. Dale Hurst, an atmospheric chemist with the National Oceanic and Atmospheric Administrations Global Monitoring Centre in Colorado, It is amazing that these chemicals are still being strongly emitted seven years after their production was banned. This finding implies that the stockpiles of such chemicals are a lot greater than what researchers anticipated. Mr. Hurst and his team measured levels of six chemicals from planes flying at 3,000-6,000 feet over the United States and Canada. The highest levels they found were of CFC-113, used in the electronics industry to clean circuit boards. Mr. Hurst said that about 45 per cent of the total global emissions of this chemical appear to be coming from the United States and Canada.

The ozone hole develops in the Antarctic each winter and vanishes months later. In 2005, the hole reached

15.12 million square kilometres, an area almost as big as Canada and the United States combined. Though this is larger than the 2004 ozone hole, it is smaller than the 16.25 million square kilometres recorded in 1989. Ozone has also been declining over the Arctic, North America and Europe, although not as dramatically.

Website: www.mercurynews.com

Water vapour: Key to ozone?

Scientists are studying the behaviour of water vapour in the atmosphere in a bid to shed light on predicted future changes in the ozone layer, which shields the earth from harmful ultraviolet radiation. A team of scientists under the European Unions ozone monitoring mission, called SCOUT-03, has finished collecting data in Australia, where they studied various phenomena, covering water vapour levels, lightning as well as some chemical reactions in the atmosphere.

According to German Aerospace Centre scientist Mr. Andreas Fix, We know pretty well about CFCs and how they destroy ozone, and now we see some water vapour trends in the stratosphere. Scientists need to learn more about ozone holes and the possible connections to global warming and the water vapour in Earths stratosphere. There is an increase in water vapour and this may also affect the ozone up there, Mr. Fix said. Scientists have observed an increase in water vapour in the stratosphere from 1960 to 2000, after which its level became constant. However, scientists have not yet decided what impact this might have on ozone loss or recovery, Mr. Fix expressed. The new data on water vapour levels will be put into a computer model.

Website: www.bangkokpost.com

Cataract cases predicted to rise in the United States

A new study indicates that an increase in exposure to ultraviolet (UV) radiation, resulting from further depletion in the earths stratospheric ozone layer, could lead to a significant rise in the number of cataracts in the United States. A study undertaken by Dr. Sheila K. West and colleagues at Johns Hopkins Hospital, the United States, has unveiled that unlike skin cancer, which affects people with lighter skin more often, cataracts affect African-Americans at a higher rate than Caucasians.

The study used data from a Maryland population-based survey of over 2,500 participants, which provided information on cataracts and UV radiation exposure. By combining this with other data, researchers created a model to depict the risk of cataract in the local population in relation to increasing UV radiation. It is now estimated that by 2050, cataract rates would increase by 1.3-6.9 per cent, thereby resulting in as many as 830,0000 new cases by 2050. This significant increase would add about US$3 billion in health-related costs.

Website: www.newsinferno.com

Ozone scientists in Australia

More than 100 scientists from various nations congregated in the capital of Australias Northern Territory, Darwin, to conduct experiments that would help predict the health of the ozone layer. This effort is also expected to help improve storm forecasting. Scientists will study the unique storm system north of Darwin known as Hector. They will also collect data from tropical clouds to help determine how thunderstorms work and their influence on the environment.

Mr. Peter May, a Bureau of Meteorology scientist, states that The biggest errors that we have in forecasts and the biggest uncertainty in climate models, are associated with the impact of thunderstorms. Mr. Cornelius Schiller, a German scientist, expressed that the research will also identify the impact of storms on the ozone layer, and in turn predict its condition. Tests would be carried out for three months.

Website: www.abcasiapacific.com

ODS PHASE-OUT IN INDIA

India to host meeting on ozone layer protection

The combined 7th Meeting of the Conference of Parties to the Vienna Convention for Protection of the Ozone Layer and the 17th Meeting of Parties (MOP) to the Montreal Protocol on Substances that Deplete the Ozone Layer was held recently in Dakar, Senegal. Mr. Namo Narain Meena, the Minister of State for Environment and Forests, led the Indian delegation at the high-level segment of this meeting. Some of the important decisions taken at this meeting include replenishment of the Multilateral Fund for the year 2006-08, membership of the executive committee for the year 2006 and venue of the 18th MOP. MOP approved a budget of US$470 million for the period 2006-08. It also endorsed the selection of India as a member of the executive committee for the year 2006, along with China, Sri Lanka and the Philippines as co-opted members. Indias proposal to host the 18th MOP to the Montreal Protocol in India in 2006 was also agreed to.

Website: www.pib.nic.in

Workshop on depleting ozone

A two-day workshop on Substances Depleting the Ozone Layer for Environment Agencies was organized by the State Council for Science, Technology and Environment and Ozone Cell of the Union Ministry of Environment and Forests during November 2005. According to Dr. Shrikant Baldi, Chairman-cum-Secretary, Science and Technology, the need for maintaining proper balance between development and environment protection is imperative as environment pollution was an issue of global concern. There is an urgent need for conducting research to develop alternative technology that is environment-friendly and economical, he said. Dr. Baldi expressed that training programmes were being organized to create awareness about implementation of the Montreal Protocol. He urged industrialists to tap funding and technology transfer support from the Multilateral Fund for switching over to non-ODS technologies.

Website: www.tribuneindia.com

TexCom, GTZ offer training on CTC alternatives

The German Technical Cooperation (GTZ), along with Tirupur-based Textiles Committee, organized a training programme in Chennai during December 2005 in an effort to identify environment-friendly alternatives to substitute carbon tetrachloride (CTC) usage in the textile industry. Applications of CTC include removing stains from garments, cleaning or degreasing of steel, metal parts and machinery, and manufacture of chlorinated rubber, pesticides and pharmaceuticals. In India, the textile industry alone requires over 1,500 t/y of CTC for removing stains from garments. In addition, CTC is used substantially in servicing garment making machinery.

Website: www.business-standard.com

IN THE NEWS

Probe unveils Chinese firms at the forefront illegal CFCs trade

A new report claims that firms in mainland China play a lead role in the illegal global trade of ODSs. The study released by the international green group Environmental Investigation Agency (EIA) describes how such firms routinely circumvent government controls, mislabel and mis-declare CFCs in order to smuggle these around the world. The study lays down findings from eight years of undercover investigations into the global illegal CFC trade.

Posing as chemical dealers, EIA investigators visited a number of firms in Zhejiang province, on the coast south of Shanghai, which the report paints as the centre of the nations CFC industry. EIA alleges that firms in the province offered to sell 135 t of illegal CFCs, as well as to guarantee its continued supply. The initial order was equivalent to more than 12 per cent of the entire quantity of CFCs available under the protocol to China for all its exports and stockpiling needs in 2006, the report said. The most frequently used method to smuggle CFCs was by mis-declaring them as alternative chemicals that are not controlled by the Montreal Protocol. China ratified the protocol in 1991 and later accepted a multimillion dollar package to bring the end of production forward by three years.

Website: www.thestandard.com.hk

Governments take forward fight to save ozone layer

Member states of the Montreal Protocol have agreed to a budget of US$470 million to support the continuing transition by developing countries to CFC-free refrigerators and other ozone-safe technologies during the three-year period 2006-2008. The strong push to complete the developing countries phase-out of ODS reflects continued international concern about the damaged condition of the stratospheric ozone layer. The newly agreed funding package would supplement the almost US$2 billion already disbursed since 1990 by the Protocols Multilateral Fund on capacity building and projects for phasing out ODS.

Completing the phase-out of CFCs by developing countries is essential for returning the stratospheric ozone layer to health, according to Mr. Marco Gonzalez, Executive Secretary of the Protocol, which was negotiated under the auspices of the United Nations Environment Programme (UNEP). The meeting also concurred on continuing the phase-out by developed countries of several remaining uses of CFCs and methyl bromide. The phase-out deadlines for these countries have already passed; however, the Protocol allows governments to request for specific, time-limited critical-use exemptions when technically or economically feasible alternatives are not available.
Other issues addressed at the members meeting include the challenge of reducing illegal trafficking in CFCs and other substances and a recent joint report of the Montreal Protocols Technology and Economics Assessment Panel and the Intergovernmental Panel on Climate Change on ozone and global warming interlinkages entitled Safeguarding the Ozone Layer and Global Climate System. Contact: Mr. Michael Williams. Tel: +41 (22) 9178 242; E-mail: michael.williams@unep.ch. (Website: www.unep.org)Member states of the Montreal Protocol have agreed to a budget of US$470 million to support the continuing transition by developing countries to CFC-free refrigerators and other ozone-safe technologies during the three-year

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Website: www.unep.org

Workshop for customs officers

The National Ozone Unit (NOU) of the Afghan National Environmental Protection Agency (NEPA), together with UNEP and the General Directorate of Customs of the Afghan Ministry of Finance (MoF), had organized a National Train-the-Trainers Workshop for Customs Officers on Monitoring and Control of ODS during November last year. About 40 participants from Afghanistans customs department, including border check posts, the Ministry of Trade, the Chamber of Commerce and Pakistans Customs Office attended the three-day workshop. Training was imparted by members of NOU, NEPA, Indias National Academy of Customs, Excise and Narcotics and UNEP.

The train-the-trainers workshop concentrated on Afghanistans international commitments under the Montreal Protocol and the national obligations for its implementation. Information on regulations and licensing system in Afghanistan was combined with practical training on how to identify ODS with ODS identifiers and on the reporting system. The Deputy Director General of NEPA formally handed over Afghanistans first ODS identifier, donated by the Government of Iran, to the Director General of the Customs Department.

Afghanistan ratified the Vienna Convention for the Protection of Ozone Layer and its Montreal Protocol on substances that deplete the Ozone Layer, along with all four amendments, on 17th June 2004.

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Or Mr. Zahid Ullah Hamdard, Ozone Officer, The National Ozone Unit, National Environmental Protection Agency (NEPA), Darul Aman Road, Kabul, Afghanistan. Tel: +93 (079) 565 458

E-mail: zahidhamdard1@yahoo.co.in

Website: www.unama-afg.org

Initiative to protect ozone layer

In an attempt to get in tune with a number of environmental conventions, the government of Indonesia will begin restricting the entry of ODS into the country. The Office of the State Minister for the Environment and the Directorate General of Customs and Excise signed a memorandum of understanding (MoU) to jointly control, prevent, detect and examine the documentation of ODS consignments arriving in the nation. Under the eight-point agreement, the environmental ministry will train customs and excise officials to increase their capacity to identify these substances.

During the signing ceremony for the MoU, officials from the environmental ministry presented 20 refrigerant identifier devices to the customs and excise director general, Mr. Eddy Abdurrachman, to be used to help identify ODS at entry points across Indonesia. Mr. Abdurrachman stated that the US$2,000 devices would be installed at major airports and seaports across the nation.

Website: www.thejakartapost.com

China imposes restrictions on CFC-113 production

The Chinese government has prohibited the production and consumption of CFC-113. This decision is in line the nations commitment to phase out ODS production and consumption. The State Environmental Protection Administration (SEPA) has warned that any units or individuals who continue to produce and use CFC-113 will be punished. As per the Montreal Protocol, all developed countries have agreed to phase out the chemicals by 1 January 2005 while the deadline for developing countries is 1 January 2015. China has pledged to phase out its major ODS production and consumption by 2010.

Website: www.news.xinhuanet.com

Korea stipulates limit on production and import of ODS

The Republic of Koreas Ministry of Commerce, Industry and Energy has stipulated a ceiling on the amount of combined production and import of ODS in a meeting to adjust supply and demand of such substances. Under the Montreal Protocol on Substances that Deplete the Ozone Layer, Korea and other parties to the pact have been reducing gradually CFCs, halons as well as other substances in terms of production and imports for some of them by 2010. As such, the cap on various ODS are as follows:

Chlorofluorocarbons 2,975 t, down 67 per cent from the reference quantity;

Carbon tetrachloride 42 t, down 88 per cent;

Methyl chloroform 303 t, down 88 per cent;

Halon 1,471 t, down 60 per cent; and

Hydrochlorofluorocarbons 3,972 t, just as applied for by the industry.

Website: www.kois.go.kr

Philippines issues warning on mislabelled refrigerants

In the Philippines, the Department of Environment and Natural Resources (DENR) has sounded an alert warning car and refrigerator owners about the proliferation of fake refrigerants. Legitimate air-conditioner and refrigerator service shop owners and technicians have been complaining about the rampant sale of mislabelled refrigerant cylinders. The modus operandi involves labelling refrigerant cylinders as R-134a when they actually contain CFCs. Such cylinders may also contain a mix of CFC and R-134a to match the pressure of pure R-134a, making the mixture difficult to detect. To avoid being victimized, DENR said the public should patronize only legitimate repair shops that have been trained either by the Department of Trade and Industry or the Technical Education and Skills Development Authority, and are equipped with refrigerant identifiers. DENR is regulating the importation of CFCs in compliance with the nations commitment to the Montreal Protocol.

Website: www.visayandailystar.com

Philippines to axe ozone-depleting refrigerants

Ozone-depleting refrigerants have been banned in the Philippines. This measure is anticipated to affect motorists with vehicles that are at least six years old, manufacturers of foam mattresses, inhalers for asthma patients and others relying solely on CFCs. Environment and Natural Resources Secretary, Mr. Michael Defensor, had earlier urged owners of older cars that utilize CFC-12 or R-12 type of refrigerants in their air-conditioning systems to move over to CFC-free R-134a that are being used in newer vehicles.

Website: www.terradaily.com

Buying power vs. ODS

The Philippines has taken an innovative approach in its fight against ODS, consumers buying power. Orientation seminars and workshops are being conducted in every target sector to provide basic information about the CFC phase-out programme. The orientation, with the theme Save the Ozone Layer: Use Your Buying Power Wisely, is being organized by DENRs Philippine Ozone Desk, in cooperation with the Department of Trade and Industrys (DTI) Bureau of Trade Regulation and Consumer Protection.

Consumers are being advised to look closely at labels of consumer goods, buy the firmest and densest foams, and for asthma patients, select inhalers that do not contain CFC all these being some of the things that the

public can do to help save the ozone layer. Consumers are also being urged to support service shops accredited by DTI, to ensure that their technicians are capable of handling refrigerants and are not recharging their air-conditioners or refrigerators with incompatible refrigerants.

Website: www.pia.gov.ph

REFRIGRATION/AIR-CONDITIONING

New cooling system to offset gas prices

In the United States, Carrier Corp., a unit of United Technologies Corp., has strengthened its position as a leader in heating and cooling systems by launching the next advancement in the growing trend of energy efficient products. Hybrid HeatTM system is a fuel-saving alternative to traditional heating and cooling units that combines a furnace with a heat pump, rather than an air-conditioner.

At the heart of the Hybrid Heat system lies Carriers state-of-the-art heat pump, which works as an air-conditioner in hot weather and can reverse the process to provide heat in cold weather. Rather than burning fuel to generate heat, the heat pump moves heat without a flame, making it a more efficient method of heating a home. Additionally, some Carrier heat pumps feature Puron non-ozone depleting refrigerant, thus making them an environmentally sound option.

Contact: Ms. Jillian Kwolek/Ms. Christina Cozzi, Carrier Corp., United States of America. Tel: +1 (212) 6972 600

E-mail: jkwolek@gibbs-soell.com
ccozzi@gibbs-soell.com

Website: www.carrier.com

Website: www.sev.prnewswire.com

Water-cooled chiller

The United States-based Carrier Corp. has added a new model to its range of Evergreen Series water-cooled chiller. The 23XRV uses non-ozone depleting HFC-134a refrigerant and a variable-speed screw compressor that delivers full-load energy efficiency ratings down to 0.53 kW/t and part-load energy efficiency ratings down to 0.33 kW/t. As such, peak demand charges and power distribution equipment size requirements are reduced while providing low life cycle costs. With an advanced variable frequency drive, the 23XRV achieves a power factor of 0.99, lowering energy transmission losses by as much as 20 per cent of the industry average. Also provided is total harmonic distortion (THD) of less than 5 per cent, which minimizes interference to sensitive electrical equipment, exceeding the Institute of Electrical and Electronics Engineers standard for THD.

Website: www.hpac.com

Retrofitting vehicle air-conditioners

One of the measures implemented by the Indian government to mitigate the release of CFCs is an order mandating retrofitting of air-conditioning units in vehicles manufactured before November 2002 with HFC refrigerant. Essentially, retrofitting, carried out by companies such as Subros Limited, requires alterations in the following parts:

Compressor oil (following overhauling);

Both hose suction and discharge;

All rubber parts, including O rings;

Condenser to ensure better heat dissipation;

Expansion valve;

Receiver dryer; and

Thorough flushing of rest of the components with cleaning agents followed by dry nitrogen.
(Ozone Cell)

Liquid-cooled refrigerants solve density hot spots

Several companies are revisiting liquid cooling technologies in a bid to provide an ideal solution for cooling requirements in data centres. Even the best infrastructure plans, e.g. hot-aisle/cold-aisle designs, have not been able to guarantee that the servers will stay cool. Liebert XD from Liebert Corp., the United States, is a supplemental cooling system that sits on top of a rack in high heat density areas of a data centre. It pumps a liquid refrigerant (R-134a) that is converted into gas within heat exchangers and then returned to the pumping station where it is recondensed to a liquid. Liebert XD technology is being used in well-designed hot-aisle/cold-aisle data centres that have problems in high-density areas. Virgina Techs research department has incorporated XD technology at its supercomputing lab.

Another liquid cooling technology available is IBMs Cool Blue, which is known as the eServer Rear Door Heat Exchanger. Cool Blue is a door that hinges to the back of a rack, with a hose installed in the floor that goes up the door. Sealed tubes filled with chilled water remove up to 55 per cent of the heat generated in a fully populated rack, then dissipates it by pulling hot water into the unit so it is not released into the data centre. Another liquid-based cooling product is SprayCool, from ISR Inc., which utilizes the evaporation of a non-conductive liquid to cool components.

Website: www.searchdatacenter.techtarget.com

Air-cooled liquid chiller

30XA AquaforceTM systems from Carrier Corp., the United States, are air-cooled packaged chiller units that are fully piped and charged with HFC-134a refrigerant.

Weatherproof construction, lightweight distribution and a small footprint make them ideal for rooftop or ground level installation. Upward discharge airflow minimizes directional sound and carries heat away from surrounding areas.

Contact: Customer Service, Carrier Corp., Customer Relations, P.O. 4808, Carrier Parkway, Syracuse, New York 13221 4808, United States of America. Fax: +1 (315) 4326 620.

Website: www.commercial.carrier.com

HFC blend for HCFC-22 systems

Arkema, France, is offering a 100 per cent HFC blend for easier retrofitting of existing refrigeration and air-conditioning installations based on HCFC-22. Forane FX 100 is a non-inflammable and non-toxic refrigerant fluid that allows for a simplified retrofit. It requires just one drainage of the systems original oil (mineral or alkylbenzene) followed by its direct replacement by a POE (PolyOilEster) oil. Optimum performance, similar to R-22, is feasible without the need for a thorough rinse of the circuit; thanks to a high tolerance to residual mineral or alkylbenzene oil.

Tests at several commercial installations yielded positive results by attaining highly satisfactory operating conditions. FX 100 complements the extensive range of Forane refrigerant fluids from Arkema to effectively fulfill customer requirements.

Contact: Ms. Sylvie Finessi, Arkema, Direction de la Communication/Public Affairs Division, 4-8 cours Michelet, La Defense 10, F 92091, Paris La Defense Cedex, France. Tel: +33 (1) 4900 7899

E-mail: sylvie.finessi@arkemagroup.com

Website: www.arkemagroup.com

SOLVENTS

High-performance alternatives to HCFC-141b

3M Company, the United States, offers non-ozone depleting, non-polluting line of cleaners NovecTM Aerosol Cleaners as viable alternatives to HCFC-141b. The three low-toxicity, fast-drying cleaners are ideal for challenging manufacturing applications and effective on a variety of soils and pollutants. NovecTM Contact Cleaner removes light grease, oils, silicones and dust from susceptible electronics and is compatible with sensitive plastics such as ABS, PMMA and polycarbonate. It is ideal for electrical or energized components, including contacts, connectors, relays, switches, circuits, instrumentation and sensors. NovecTM Electronic Degreaser removes grease, oils and handling soils from electromechanical and other sensitive devices while NovecTM Flux Remover removes rosin flux residues, oils, grease, waxes and similar contaminants found in electronics manufacturing. None of the cleaners incorporate HFCs, HCFCs, HAPs or n-propyl bromide

Contact: 3M Company, Bonding Systems Division, 3M Centre, St. Paul, MN 55144, United States of

America. Tel: +1 (651) 7376 501; Fax: +1 (651) 7331 771

Website: www.3m.com

Website: www.news.thomasnet.com

Metal parts cleaning

Integra Environmental Ltd., the United States, offers Natures Way PC, a non-toxic, heavy-duty product for removing hydrocarbons from automotive and machinery parts and other hard surfaces. This water-based bioremediating parts degreaser/cleaner assures superior results while reducing or eliminating waste disposal problems caused by the use of ordinary parts cleaners. Notable features and benefits offered by this ODS-free product are listed below:

Superior degreasing capabilities;
Quick breakdown, encapsulation and removal of oily wastes;

Microbes transform wastes into harmless by-products and then function to clean any previously existing contamination;

Bioremediation action begins immediately and continues at an accelerated pace;

Breaks the liquid waste liability trail with no need for off-site disposal of the cleaning fluid; and

EPA-listed for emergency spill response plan.

Contact: Integra Environmental Limited, 5825, Centralcrest, Houston, TX 77092, United States of America. Tel: +1 (713) 6801 234; Fax: +1 (713) 6801 608

E-mail: info@integraenvironmental.com

Cleaning agents

Albatross has developed a line of solvent blends that offer all the traits essential for textile spot cleaning purposes. All three EverBlum formulas (EverBlum GoldTM, New Premium Everblum and EverBlum SpecialTM) are drop-in replacements for 1,1,1-trichloroethane. These fast-drying cleaners effectively remove oil, grease and dirt stains.

EverBlum Gold cleaning fluid is a blend of powerful hydrocarbons with fast evaporating glycol ethers. It does not contain 1,1,1-trichloroethane, any of the traditional chlorinated solvents (methylene chloride, perchloroethylene, trichloroethylene) or HCFCs (dichlorofluoroethane).

Contact: Albatross USA Inc., 36-41, 36th Street, Long Island City, NY 11106, United States of America. Tel: +1 (718) 3926 272; Fax: +1 (718) 3922 899.

Aqueous cleaning system

East/West Industries Inc., the United States, offers an aqueous cleaning system as an alternative to ODS. Aqueous cleaning is an approved method for oxygen, hydraulic and pneumatic components and transmission lines. Notable features include:

Inorganic alkaline solution;

No residue is left behind;

Economical for bath or lot cleaning applications;

Cleaning waste is drastically reduced by filtration and recycling of water; and

Waste removal service is lowered considerably.

Contact: East/West Industries Inc., 80, 13th Ave., Ronkonkoma, NY 11779 6800, United States of America. Tel: +1 (631) 9815 900; Fax: +1 (631) 9815 990

E-mail: info@eastwestindustries.com

Website: www.eastwestindustries.com

AEROSOLS

HFA combination MDI

Inyx Pharma Ltd., a wholly owned subsidiary of Inyx Inc., the United States, has been chosen by an European pharmaceutical company to develop a combination between a corticosteroid and a -2-agonist in a single metered-dose inhaler (MDI) utilizing a non-ozone depleting hydrofluoroalkane (HFA) propellant. Corticosteroids are the most effective and widely used anti-inflammatory drugs for the treatment of bronchial asthma and other chronic obstructive pulmonary diseases (COPD), such as bronchitis and emphysema. They are often taken with short-acting or long-acting bronchodilators (-2-agonists), the primary rescue medicine used to treat asthma and other COPD attacks.

Contact: Mr. Jay M. Green, Vice President, Inyx Inc., United States of America.

E-mail: jgreen@inyxinc.com

Website: www.prnewswire.com

Xopenex HFA metered-dose inhaler launched

Sepracor Inc., the United States, announced the availability of Xopenex HFATM (levalbuterol tartrate) Inhalation Aerosol, a hydrofluoroalkane (HFA) metered-dose inhaler (MDI). Xopenex HFA is a short-acting -agonist indicated for the treatment or prevention of bronchospasm in patients 4 years of age and older with

reversible obstructive airway disease. Xopenex HFA MDI is a portable, hand-held device, with a pressurized canister containing medication and a mouthpiece to administer the medicine. Reversible obstructive airway disease includes respiratory disorders such as asthma and the reversible component of chronic obstructive pulmonary disease (COPD), affecting nearly 41 million people in the United States.

Xopenex HFA development programme included approximately 1,870 paediatric and adult subjects and 54 studies (preclinical and clinical). In each of the three, large-scale, pivotal Phase III trials that Sepracor conducted, Xopenex HFA was well tolerated and met the targeted efficacy endpoints in both adults and children with asthma.

Contact: Mr. Jonae R. Barnes. Tel: +1 (508) 4816 700.

Website: www.genengnews.com

AEROSOLS

Halogen-free,flame-retardant PUF

Clariant GmbH has obtained a United States patent for its invention relating to a halogen-free, flame-retardant rigid polyurethane foam (PUF), wherein a blend of oxalkylated alkylphosphonic acids and ammonium polyphosphate is present as flame retardant, and to a technology for its production. Oxalkylated alkylphosphonic acids are used in a mixture with ammonium polyphosphate for producing halogen-free, flame-retardant rigid PUF of this type. The same product can also be obtained by means of a process for producing a halogen-free, flame-retardant rigid PUF from polyisocyanates and polyols in the presence of blowing agents, stabilizers, activators and/or other conventional auxiliaries and additives. It comprises reacting organic polyisocyanates with compounds having at least two hydrogen atoms capable of reaction with isocyanates, in the presence of blowing agents, stabilizers and a flame-retardant combination of oxalkylated alkylphosphonic acids of the formula I and ammonium polyphosphate. The blowing agent is preferably water and/or pentane. Oxethylated alkylphosphonic acids of the formula I are preferably compounds that are liquid at processing temperature.

Website: www.freepatentsonline.com

Rigid PUF with reduced density

BASF Aktiegesellschaft has obtained a United States patent for its process to produce rigid polyurethane foam (PUF) with reduced density. The production process involves reacting organic and/or modified organic polyisocyanates with at least one higher molecular weight compound having at least two reactive hydrogen atoms and, if desired, low molecular weight chain extenders and/or crosslinkers in the presence of blowing agents, catalysts and, if desired, other auxiliaries and/or additives. The blowing agent comprises a mixture of cyclopentane, at least one compound that is homogeneously miscible with cyclopentane selected from the group consisting of alkanes and alkenes having 3 or 4 carbon atoms in the molecule, and carbon dioxide produced from water and isocyanate, and wherein the higher molecular weight compound having at least two reactive hydrogen atoms comprise polyethers, which contain aromatics and nitrogen.

The blowing agent mixture contains propane, n-butane, isobutane, cis-trans-2-butene and/or trans-trans-2-

butene. About 0.1-10 per cent by weight of cyclopentane is used and the alkanes/alkenes having 3 or 4 carbon atoms in the molecule are used in an amount of 0.1-6 per cent by weight, based in each case on the entire amount of the foam.

Website: www.freepatentsonline.com

Additive for HFC-134a foam systems

HFC-134a, an alternative to HCFC-141b in polyurethane foam applications, has limited solubility in polyurethane raw materials such as polyols. This issue can be alleviated by a careful selection of polyols and utilizing co-blowing agents, such as water. Researchers in the United States have studied the potential for utilizing trans-1, 2-dichloroethylene (TDCE), a liquid at room temperature with no ozone depletion potential (ODP) and very low global warming potential (GWP), with several HFC-134a-polyol combinations. Results indicate that the presence of TDCE can lower the vapour pressure of certain HFC-134a-polyol blends. More importantly, the presence of TDCE allows one to reduce HFC-134 levels, significantly lowering the overall vapour pressure of HFC-134a-containing systems. Finally, the presence of TDCE dramatically reduces the viscosity of HFC-134a-polyols blends, which is important for some applications.

Website: www.cel.sagepub.com

Production of polymer polyol

The combination of high solids polyols and liquid carbon dioxide (CO2) blowing techniques required for making high load bearing polyurethane foams (PUF) can create operational issues for foam manufacturers. Shell Eastern Chemicals (Pte.) Ltd., Singapore, is offering a special filtration technique that ensures Caradol polymer polyols are compatible with the latest production methods. Liquid CO2 is the most effective and environmentally acceptable blowing agent used for producing PUF. This has placed increased demand on the performance of the polymer polyol on foaming machinery equipped for CO2.

With CO2, the foaming mixture has to be kept under very high pressure until the point at which it is discharged or laid down. Foaming machines typically have small apertures in the discharge device for depressurizing the mixture immediately before the laying down process. These apertures can become blocked, however, due to the nature of the polyols, which contain small polymer particles held in a stable suspension. Larger agglomerates of particles can get stuck in the laying down device, causing blockage. Around 6 ppm of particles larger than 50 m are enough to cause a problem. Particle size in the filtered SAN grades of Caradol does not exceed 25 m, allowing smooth and continuous processing for long production runs. Foam physical properties are unaffected by the filtration.

Contact: Shell Eastern Chemicals (Pte.) Ltd., Shell House, UE Square, 83 Clemenceau Avenue, Singapore 239920. Tel: +65 6384 8000.

Website: www.shellchemicals.com

Green foaming system

Metecno-Aluma Shield, based in the United States, produces metal insulated composite panels using an ozone-safe blowing agent. Pentane is being used in place of HCFC-141b. The new foaming system provides several benefits, including zero ozone depletion potential and global warming potential. The pentane-based foaming

system complies with the EPA ban on HCFC-141b, while providing a long-term environmental option. It is especially ideal for builders and specifiers who want to demonstrate their commitment to the environment. The pentane blowing agent used, Exxsol from ExxonMobil, is the winner of the EPA 2003 Stratospheric Ozone Protection Award. With regard to fire performance, the metal insulated composite panels have been tested in accordance with UL 723/ASTM E84 Tunnel Test and FM 4880 Full-Scale Corner Test standards and achieved a Class 1 rating.

Website: www.alumashield.com

HALONS

Automatic discharge systems

Fireboy-Xintex, the United States, offers FE-241 and HFC-227ea extinguishant systems that feature automatic discharge only or auto discharge with option for manual discharge. CG2 series fire extinguishers have an automatic heat-activated discharge at 79C. A control panel indicator lamp and pressure gauge provide charge/discharge system status. Salient features of the automatic discharge only system include:

Models protecting enclosures from 0.71 m3 to 17 m3 may be set up vertically/horizontally; and

Models protecting 18.4 m3 through 28.3 m3 may be installed vertically or tipped to 60 off horizontal (30 off perpendicular).
The MA2 series fire extinguisher systems feature positive backup via a mechanical pull cable. The primary activation (heat response) is automatic at 79C. Notable features of this manual/automatic discharge system are:

Mechanical actuation feasible with pull cable assemblies and must be installed in order to retain USCG and FM approvals. Cable lengths available from 6 inches to 30 inches in two inch increments;

Models protecting enclosures from 0.71 m3 to 17 m3 may be installed vertically/horizontally; and

Models protecting 18.4 m3 through 42.4 m3 may be installed vertically or tipped to 60 off horizontal (30 off perpendicular).

Contact: Fireboy-Xintex, P.O. Box 152, Grand Rapids, Michigan 49501 0152, United States of America; Or O-379 Lake Michigan Drive, NW, Grand Rapids, MI 49544, the United States. Tel: +1 (616) 7359 380; Fax: +1 (616) 7359 381.

Website: www.fireboy-xintex.com

Halotron fire extinguishers

Badger Fire Protection, the United States, offers environmentally acceptable halon alternative portable extinguishers to meet any special hazard conditions where halon-1211 is specified. Halotron-1 is ideal for protecting office computer areas, data storage, telecommunications and hi-tech clean rooms. Halotron-1 complies with EPA guidelines and is the government recommended and specified clean agent alternative. Some of the key features are:

Available in four sizes;

Chrome-plated brass valves;

Stainless steel handle, lever, nozzle and hose band;

Colour-coded labels for instant type recognition;

Redesigned label incorporating easy to follow instructions and larger fire pictograms;

Epoxy-coated steel cylinders to resist corrosion, dents and punctures; and

12 year interval between hydrotests.

Badgers high-pressure water extinguisher is ideal for common combustible materials such as trash, wood and paper. This non-toxic, ozone-friendly stored pressure extinguisher makes it the perfect choice for apartments, schools, offices, storerooms, dry-goods stores and theaters. These pressurized water fire extinguishers perform better, last longer and provide the best value in the extinguisher industry and is the number one choice for virtually all hazards where class A-type materials may be present. Notable features include:

Chrome-plated brass valve;

Stainless-steel handle and lever;

Colour-coded labels for instant type recognition;

Redesigned label incorporating easy to follow instructions and larger fire pictograms;

Completely stainless steel cylinder that resists corrosion;

Convenient standard air chuck to pressurize;

Quick and easy to refill, no special tools needed to remove valve; and

Maximum performance at both high and low temperatures (when the optional AC40 antifreeze package is used).

Contact: Badger Fire Protection, 4251, Seminole Trail, Charlottesville, Virginia 22911, United States of America.

Website: www.koetterfire.com

FM200 fire extinguishing system

Shanghai Zhuoxiang International Trading Co. Ltd., China, offers ZQ serial and ZQW serial FM200 automatic extinguishing systems (HFC-227ea). ZQ serial incorporates a storage cylinder, liquid check valve, high-pressure hose pipe, header pipe, selective valve, network, sprinkler and automatic extinguishing controller.

ZQW serial comprises a storage cylinder, high-pressure hose pipe, box, sprinkler and automatic extinguishing controller. The storing pressure of the system is 4.2 MPa when 20C and the maximum working pressure is 5.3 MPa (50C).

Contact: Mr. Yinfang Xu, Shanghai Zhuoxiang International Trading Co. Ltd. (Fire Protection Products), China. Tel: +86 (21) 6875 1796; Fax: +86 (21) 6875 1708.

Website: www.zhuoxiang.en.ec21.com

Full range of commercial grade fire extinguishers

In the United States, Koetter Fire Protection an authorized distributor of Amerex, Ansul and Badger wheeled and hand portable fire extinguishers is offering commercial-grade fire extinguishers. From the economically priced Ansul Sentry line of dry chemical and CO2 fire extinguishers to the new Clean Guard Clean Agent extinguisher (halon-1211 replacement) or the rugged Amerex high-performance and Ansul Red Line industrial grade hand portable and wheeled fire extinguishers. The types of fire extinguishers include: Water and foam, water mist, wet chemical, regular dry chemical, ABC multi-purpose, carbon dioxide, Halotron I fire extinguishers, high-performance dry chem and Class D dry powder fire systems.

Contact: Koetter Fire Protection, 10351 Olympic Drive, Dallas, Texas 75220, the United States. Tel: +1 (214) 3583 593.

Website: www.koetterfire.com

Marine-type fire extinguisher

ZEC Marine CO2 fire extinguishing system from Shanghai Zhuoxiang International Trading Co. Limited, China, is a modernized fire protection equipment widely applied in international vessel circles, which can be used for fire protection of offshore platform, machinery spaces of ship, pumps room, oil tanks, power generation room, paint room, woodworking room and cook house, etc. This system meets the requirement of national environment protection.

Contact: Mr. Yinfang Xu, Shanghai Zhuoxiang International Trading Co. Ltd., China.

Website: www.zhuoxiang.en.ec21.com

FUMIGANTS

New biological product to replace methyl bromide

Specialists at the Genetic Engineering and Biotechnology Centre (CIGB) in Camagey, Cuba, have developed a biological nematicide that, without any secondary effects, interrupts the reproductive cycle of crop-damaging worms. The active agent in HeberNem is Tsukamurella paurometabola, strain C-924. This bacteria has demonstrated the best efficiency among the 158 strains analysed.

This is the first time that the antiparasitical and nematicidal functions of the micro-organism have been established, for which the product has already received two national patents and has also been approved by international patent agencies in several European, American and Asian countries. In places with harsh winters, it is customary to disinfect the soil with methyl bromide (MB). However, owing to the damage this chemical causes to the ozone layer and because other chemicals applied as substitutes have equally undesirable effects, the world has been painstakingly searching for organic solutions. HeberNem has the potential to take the place of MB.

Tsukamurella paurometabola, a naturally occurring micro-organism, is found in soil and organic matter. This strain can be isolated and conserved in cell banks, which can then be reproduced on a large scale. Despite the fact that all of this occurs in an invisible world, HeberNem has demonstrated an enormous capacity to reduce the presence of nematodes, thus increasing agricultural yields. It has been tested on more than 25 ha of distinct soil types and, after 18 toxicological and ecological tests, the nematicide has demonstrated to be an innocuous product without any type of negative environmental effects.

HeberNem has exhibited an efficiency rate of 90-95 per cent. In several citrus companies throughout the country (La Jquima in Holgun; Ceballos in Ciego de Avila; Arimao in Cienfuegos; Jagey Grande in Matanzas, and Ctricos Sola and Los Ranchos in Camagey, among others) HeberNem has been used with successful results.

Website: www.granma.cu

Controlling weeds

In the United States, a team of researchers from Alabama Agricultural Experiment Station and the Auburn University investigated into the efficacy of various combinations of furfural (2-furfuraldehyde) with metam sodium and dazomet in weed control. Furfural is a naturally occurring compound produced commercially from sugar cane bagasse and other pentosan containing materials. This compound has significant nematicidal properties, with limited activity against some weed species. Mixtures of furfural with methyl isothiocyanate and methyl isothiocyanate-generating compounds (metam sodium and dazomet) were studied as broad-spectrum treatments to replace methyl bromide in soil fumigation.

In trials, metam sodium and furfural were applied to soil at rates of 0-500 mg ai/kg soil alone and in combination with metam sodium at 19.6 mg ai/kg soil. The soil (from a cotton field) used in these trials was infested with yellow nutsedge, large crabgrass, hybrid pigweed, annual morningglory and other annual weeds. In another set of experiments, furfural and dazomet were delivered in an aqueous emulsion containing 8 per cent furfural and 2 per cent dazomet. Results from the studies reveal that combinations of furfural with either metam sodium or dazomet exhibit strong herbicidal activities derived from synergistic interactions between furfural and the other compounds.

Contact: Mr. R. Rodriguez Kabana, The Auburn University, the United States.

E-mail: rrodrigu@accesag.auburn.edu

Website: www.mbao.org

Efficacy of MB alternatives on tomato crops

In the United States, researchers at North Carolina State University, have studied the efficacy of fall and spring applied methyl bromide (MB) alternatives on Amelia variety of tomato. Results have shown that application of InLine in the spring yielded superior yields compared to MB applied in the fall and similar to MB in spring. Similarly, Telone-C25 generated yields comparable with the respective MB treatments. Phytotoxicity was not recorded consistently for any treatment. A 14-day plant-back waiting period was adequate to avoid Telone-generated phytotoxicity. Contact: Mr. R. M. Welker, Department of Plant Pathology, North Carolina State University, Raleigh, NC 27695, United States of America.

Website: www.mbao.org

Mulch effect on nutsedge control

Researchers at the University of Florida, the United States, have studied the efficacy of mulches in an integrated pest management programme to lower the use of hazardous fumigants like methyl bromide. In two field studies, metallized, HDPE mulches and virtually impermeable film (VIF) were used with methyl bromide (MB) and chloropicrin. In these trials, VIF and metallized mulch had higher MB concentrations in the soil than HDPE. However, differences between VIF and metallized mulch were not consistent throughout the two trials. Increasing fumigant rates raised nutsedge control for each mulch. Nutsedges were controlled the best with metallized mulch.

Website: www.mbao.org

Weed control using sodium azide and herbicides

In the United States, researchers at the Auburn University and Alabama Agricultural Experiment Station have tested the efficacy of using sodium azide in combination with commercially available herbicides to control weeds. Sodium azide, in its SEP 100 (American Pacific Corp.) formulation, controls plant pathogenic nematodes and fungi when applied to soil at rates less than 44.8 kg ai/ha. Combinations of sodium azide with three registered herbicides, which are effective against nutsedges and other hard-to-kill weeds, were investigated. Soil used for the trials was infested with yellow nutsedge, hybrid pigweed, large crabgrass, morning glory and other annual weeds.

Results unveil that after 28 days of treatment, SEP 100 alone at 44.8 kg/ha rate was ineffective in controlling nutsedge. However, all combinations of SEP 100 with s-metholachlor yielded excellent control of nutsedge and other weed species. After 32 days of treatment, wherein SEP 100 had been applied at 0 and 44.8 kg ai/ha alone as well as in combination with halosulphuron-methyl at 10.2, 25.4, 50.8, 88.9 and 101.6 g ai/ha, combination treatments of SEP 100 and halosulphuron-methyl resulted in excellent nutsedge control and the best overall herbicidal activity.

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Website: www.mbao.org

MB alternatives for strawberry

Researchers at Instituto Andaluz de Investigacion y Formacion Agraria, Spain, and IFAS-University of Florida, the United States, have evaluated some methyl bromide (MB) alternatives for application on strawberry. Experiments were undertaken at two sites, one in Spain and the other in Florida. Common treatments in both locations were non-treated control, MB + chloropicrin, 1,3-dichloropropene + Pic (Telone C-35 and Telopic), Pic, dimethyl disulphide (DMDS) + Pic and propylene oxide (Propozone). Dazomet was only tested in Spain, whereas the combination of methyl iodide + Pic was used in Florida. Results have unveiled that Telone C-35, DMDS + Pic and Pic consistently exhibited similar marketable yields as MB + Pic. Similar results were found in Florida, with the exception of propylene oxide, which had equal marketable fruit weight as MB + Pic.

Website: www.mbao.org