



Panas Division

1	ACNERIS GEL	Adapalen & Clindamycin Gel	19	MESPAS	Mefenamic Acid Tablets BP
2	AIRMONT 10	Montelukast Chewable Tablets USP	20	MUPICIN 5g/10g	Mupirocin Ointment USP
3	ATUNE 50 DT	Diclofenac Free Acid	21	MUPICIN BM 5g/10g	Mupirocin & Beclomethasone Ointment
4	ATUNE GEL	Compound Diclofenac Gel	22	NEUROCOBAL DT ⁵⁰⁰ / ₁₅₀₀	Methylcobalamine Dispersible Tablets
5	AZIPAN 500	Azithromycin Tablets IP	23	MELASTAR CREAM	Hydroquinone, Mometasone Furoate & Tretinoin cream
6	CETOZ	Cetirizine Tablets IP	24	OSSICAL	Calcium Carbonate with Vit. D3 Tablets IP
7	CETOZ-L	Levocetirizine Dihydrochloride Tablet IP	25	PANOXY	Antioxidants Capsules
8	DIROBIN	Compound Dithranol Ointment	26	PROFILAC	Pre. and Probiotic Capsules
9	DEEVIT 0.25	Calcitriol Capsules BP	27	REGAB 50/75	Pregabalin Capsules IP
10	DOXMA 400	Doxofyline Tablets IP	28	SKOPE 10/20	Hyoscine Butyl Bromide Tablets IP
11	TRANSTOP-500	Tranexamic Acid Tablets IP	29	TOPOZ	Pantoprazole Tablets IP
12	EMIDONE DT	Domperide Tablets IP	30	UNLID 500	Ornidazole Tablets IP
13	F-CON	Fluconazole Capsules IP	31	XTRADERM CREAM	Beclomethasone, Clotrimazole & Gentamycin
14	FLEMAC 100	Aceclofenac Tablets IP	32	ZENIM DT	Nimesulide Dispersible Tablets
15	IROMAX	Iron with folic Acid chewable Tablets	33	ALMINTH	Albendazole Tablets IP
16	LEVOQUIN 500	Levofloxacin Tablets IP	34	FAMVIR 125/250/500	Famciclovir Tablets IP
17	RASEC 20	Rabeprazole Tablets IP	35	BACTOXYL DS	Metronidazole and Diloxanide Tablets
18	ACTILUZ	Luliconazole Cream			



NuZen Division

1	BASEL 10/20	Ebastin Tablets IP
2	CLEOCIN 300	Clindamycin Capsules IP
3	DALAFIL 5/10	Tadalafil Tablets IP
4	DEEVIT OINTMENT	Calcitriol Ointment
5	DEEVIT PLUS	Calcium Carbonate & Calcitriol Tabs.
6	DIANA 0.025/0.5	Tretinoin Cream USP
7	DIANA-C 10/20	Isotretinoin Capsules USP
8	DIOSTEO	Diacerine Capsules IP
9	ESPRO 40	Esomeprazole Tablets IP
10	ETOLAC ER 400/600	Etodolac ER Tablets USP
11	ETOLAC 200	Etodolac Tablets USP
12	FLUSH	Flavoxate Tablets BP
13	HAYFEX 120/180	Fexofenadine Hcl Tablets IP
14	ITRAN-100	Itraconazole Caps. USP
15	KAARID 500	Clarithromycin Tablets BP
16	KOZY 50/100	Ubidecarenone Capsules USP
17	TINDER 500/1000	Tinidazole Tablets IP
18	MERINA	Mebeverine Tablets IP
19	MESORAL CREAM 10	Methoxsalen Cream
20	MESORAL 10	Methoxsalen Tablets
21	ORPAR	L-Ornithine L-Aspartate Capsules
22	RUTALGIN	Dexketoprofen Trometamol Gel
23	SPATIZ 2	Tizanidine Tablets IP
24	TACROMUS 0.03%/0.1%	Tacrolimus Ointment
25	AIRMONT L10	Montelukast Sodium and Levocetirizine Hcl Tablets IP
26	IMULEF-10/20	Leflunomide Tablets IP
27	LIVOPAN 300	Ursodeoxycholic Acid Tablets IP
28	SILOCAP-4/8	Silodosin Capsules



Kalash Division

1	ADETRIP 10/25/75	Amitriptyline HCL Tablets USP
2	DULIFE 20/30/40	Duloxetine GastroResistant Tablets IP
3	BENCLOB 5/10	Clobazam Tablets BP
4	CITICOL 500	Citicoline Tablets
5	CIZIRON 10	Flunarizine Tablets
6	DOLFIN 25/75	Dosulepin Tablets BP
7	ECIDEP 5/10/20	Escitalopram Tablets IP
8	EPISOD 25/50/100	Sertraline Tablets BP
9	OLPIN 2.5/5/10	Olanzapine Tablets IP
10	PSYQUIT 25/50	Quetiapine Tablets IP
11	REGAB M ^(50/750) / _(75/750) 75/1500	Pregabalin & Methylcobalam Caps IP
12	DEPIVAL	Nortriptyline Tablets IP
13	ZECLO 0.25/0.5/1/2	Clonazepam Tablets IP
14	ZEPOX 5/10/25	Chlordiazepoxide Tablets IP
15	ZOLDEM 5/10	Zolpidem Tartrate Tablets IP
16	RIZTIRON 5/10	Rizatriptan Benzote Orally Disintegrating Tablets USP

वर्ष : ६,

अंक : २,

२०८० फागुन - २०८१ श्रावण

पानस प्रवाह



PANAS PHARMACEUTICALS

THE LAMP OF LIFE





पानस प्रवाह

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Printed @

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Highlights

1. Airlock systems
2. Role of Chemistry
3. Expiry date of pharmaceuticals
4. Product profile
5. Shortly coming products
6. Photo Gallery

Shortly Coming Products ...

SEVEMER-400 & 800

Sevelamer Carbonate Tablets

(Phosphate Binder)

LERACE 250 & 500

Levetiracetam Prolonged
Released Tablets IP

(Antiepileptic)

ATROZ 20 & 40

Atorvastatin Calcium Tablets IP

(HMG-CoA reductase inhibitors (statins))

CARLOS H50

Losartan Potassium & Hydrochlorothiazide
Tablets IP

(Angiotensin II receptor antagonist
and Diuretic)

SICRET 25, 50 & 100

Sitagliptin Phosphate Tablets IP

(Dipeptidyl peptidase-4 inhibitor,
Antidiabetic)

TORLIS 10/20/100

Torsemide Tablets IP
(Loop Diuretic)



Spandan Div

- | | |
|--------------------------------|--|
| 1. ADOPIN 2.5/5/10 | Amlodipine Besilate Tablets IP |
| 2. CARLOS 25/50 | Losartan Potassium Tablets IP |
| 3. LIPIROSE 5/10/20 | Rosuvastatin Calcium Tablets IP |
| 4. METSAFE 500 | Metformin Hydrochloride Tablets IP |
| 5. METSAFE SR 850 | Metformin Hydrochloride SR Tablets IP |
| 6. METSAFE ER 1000 | Metformin Hydrochloride ER Tablets USP |
| 7. METSAFE GP 1 GP 2 | Metformin HCl PR & Glimepiride Tablets IP |
| 8. PROLEE 10 & 20 | Propranolol Hydrochloride Tablets IP |
| 9. CARTEL 20/40/80 | Telmisartan Tablets IP |
| 10. ADOPIN L & LH | Amlodipine & Losartan Potassium Tablets IP |
| 11. CARTEL AM | Telmisartan & Amlodipine Tablets IP |
| 12. ATROZ 5 & 10 | Atorvastatin Calcium Tablets IP |
| 13. EMPANID 10 & 25 | Empagliflozin Tablets |
| 14. SULFONIL 1/2 | Glimepiride Tablets IP |
| 15. Linage 5 | Linagliptin Tablets |
| 16. Cilnip 5 & 10 | Cilnidipine Tablets IP |

resources we use in our daily lives are at the heart of our economy, our society and our way of life. We cannot take these granted forever. As we strive towards a better world, we work to ensure chemistry's contributions are realized.

Plastic:

When it was first produced it was welcomed as a wonder product. Plastic is multitalented, light weight, durable, cost effective, easy to process, electrically and thermally insulative, impervious to water, resistant to microorganisms etc. Plastics play a very important role today in both industries and household appliances. Plastics are extensively used for various applications such as hand baggage, toys, food packages, cold drink bottles, medical equipments, components of electronic equipment, modules of vehicles, furniture, dress materials etc. Plastics are synthetic or semi-synthetic materials made from polymers which are long molecules built around carbon atoms chains, usually with hydrogen, oxygen, sulfur, and nitrogen filling in the spaces. Mostly plastics are organic polymers. Plastic is everywhere. It is in our clothes, shoes, in products on supermarket shelves, in vehicles and buildings etc. Many automobile parts are now made of plastics. Among the most used polymers are polystyrene polymers and copolymers, polypropylene, and polyvinyl chloride etc. All these plastics are made from renewable resources like petroleum or natural gas. These materials have reduced the cost and the weight of the cars.

Plastic Pollution:

Increase in the production and consumption of these plastics causes an increase of oil consumption and serious environmental pollution. Their production involves many chemicals, some of which have raised health concerns among consumers. During the manufacturing of plastic bags, the discharge of carbon and many other harmful gases causes environmental problems. About 2.8 kg of COR 2R is evolved on burning 1 kg of plastic. The percentage of plastics in municipal solid waste continues to increase rapidly. When plastic wastes are dumped in landfills, they form harmful chemicals on interaction with water and the drinking water may also be polluted. Plastic waste usually does not decompose and can last for centuries in landfills, or else ends up scattering the streets or polluting the natural environment. Non-biodegradability of synthetic petroleum-based plastic leads to the accumulation of huge plastic waste which promotes the major environmental impacts like global warming, ozone depletion, eco-toxicity and eutrophication etc. Plastics polluted our soils, rivers, oceans and harming the creatures that inhabit them. Plastics in the oceans have devastating effects on wildlife. Animals suffer when they eat plastics and habitats suffer when chemicals leach from plastics. Because they are not always disposed of properly, environmentalists fear negative outcomes for wildlife and the fight against plastic pollution. Accumulation of vast amount of plastic waste in environment encourages many industrial fields to produce biodegradable plastic. Fossil resources and environmental pollution are the major problems caused by traditional plastics and these should be solved for sustainable development in future. Thankfully, plastics technology has covered a long way.

Bioplastics:

Bioplastics are plastic materials produced from renewable biomass sources such as vegetable fats and oils, corn starch, woodchips and recycled food waste etc. They can be made from agricultural by-products and also from used plastics by using microorganisms. Bioplastics are usually derived from sugar derivatives including starch, cellulose and lactic acid. Bioplastics is also often called bio-based plastic as it is made from plants or other biological materials instead of petroleum. Bioplastics are not just one single substance. These are a huge Impact Factor family of different materials with different properties and applications. According to European Bioplastics, a plastic material is called a bioplastics if it is either bio based, biodegradable or contains both properties. Bioplastics are bio based, biodegradable or both.

Advantages of bioplastics:

- 1) They reduce carbon footprint and provide energy savings in production.
- 2) They save non-renewable raw materials by using biomass which is regenerated annually.
- 3) Their production decreases nonbiodegradable waste that contaminates the environment.
- 4) They do not contain additives like phthalates, bisphenol A or polybrominated diphenyl ethers which are harmful to human health.
- 5) They do not change the taste or fragrance of the contained edible items.

Positive Effects of Human Activities:

We must work to make sure that our developments in some areas do not adversely affect our environment and also ensuring that we compensate or minimize any damage that has occurred. One important step regarding reduction of pollution is to be aware of everything that causes pollution. We must use resources efficiently and reduce the amount of waste we create as a society. We should seek alternatives free of waste. Even by making simple changes in our daily life we can help to save the environment. We interact with the world around us continuously and sometimes some of our actions adversely affect the environment. But our interactions with environment are always not negative. Whenever we recycle used paper, plastic or metal, or pick up a piece of waste from the sidewalk, we have a positive impact on the environment. Our priority should be to avoid needless use of plastics. Sometimes the ways of using the plastic polymers cause harms to the environment.



I wish to thank all of our staff for their dedication and hard work, and our shareholders and investors for their confidence and belief. The year 2079 marked two years that our company was impeded by the COVID-19 pandemic. While we had learned many lessons and made many changes, countless challenges continued to present throughout the year and enforces us to get through them. After COVID-19 now we were facing worldwide economic problem.

That is why our most urgent and critical matter is to find out the best way to enhance our liquidity, so we could return to growth.

I repeatedly assured everyone that Panas Pharmaceuticals Pvt. Ltd would "make it", we were able to successfully restructure our operations and secured needed liquidity by the end of this year. Circumstances are improving and we will be the first to start growing and competing when the possibility unfolds. The lessons we learned over the past 5 years had made us stronger and I am committed that I will be directing our company towards recovery as soon as possible, as a gratitude to everyone who has persevered with us.

Dr. Ramesh Kumar Shrestha

शभापति खाँनद्वारा अनुगमन



पानस प्रवाह

संघीय संसदको उद्योग तथा वाणिज्य र श्रम उपभोक्ता हित समितिका सभापति माननीय अब्दुल खाँनले २०८० फागुन १७ गते आईतबारका दिन पानस फार्मास्युटिकल्स प्रा.लि.को अनुगमन गर्नुभयो।

बाँकेको गनापुरमा रहेको उद्योगको अनुगमनका क्रममा सभापति माननीय खाँनले उद्योगका विभिन्न पक्षहरूको बारे जिज्ञासा राख्नुका साथ सुझावहरू दिनुभएको कार्यवाहक फ्याक्ट्री इन्चार्ज नरेन्द्र कुमार बर्माले जानकारी गराउनुभयो।

अनुगमनका क्रममा खाँनले औषधि उद्योगमा कार्यरत कर्मचारीहरू औषधिको गुणस्तरलाई निरन्तर कायम राख्न

दत्तचित्त भएर काम गर्नुपर्ने सुझाव दिनुभयो।

उहाँले गुणस्तर नियन्त्रण विभाग, उत्पादन विभाग लगायतका मुख्य मुख्य विभागहरूमा हुने क्रियाकलापहरूको अवलोकन पनि गर्नुभएको गुणस्तर प्रत्याभुति विभागका सहायक प्रबन्धक मोहम्मद शाहिद जरगरले जानकारी गराउनुभयो।

पूर्वमन्त्री खानेपानी मन्त्री समेत रहनुभएका शभापति खाँनको टोलीले गनापुरस्थित के एल दुगड, अम्बे स्टिल उद्योग लगायतका दर्जनौ उद्योग प्रतिष्ठानहरूको पनि अनुगमन गरेको जानकारी प्राप्त भएको छ।



CILNIP 5/10

(CILNIDIPINE TABLETS IP)

– Mr. Atif Hussain Halwai

Asst. Manager-R & D

INTRODUCTION:

Cilnidipine is a medicine used to treat high blood pressure (hypertension). It belongs to a class of medicines known as a calcium channel blocker which helps to lower blood pressure. This helps prevent heart attacks and strokes. It may also be prescribed to prevent angina (heart-related chest pain). In contrast to most other calcium channel blockers, cilnidipine blocks two types of calcium channels – the L type channels in the blood vessels and the N type channels in the nervous tissue.

THERAPEUTIC INDICATION

Cilnidipine is often prescribed to treat patients with hypertension and prevents the risk of angina, heart attack or stroke.

POSODOLOGY AND METHOD OF ADMINISTRATION:

The usual dosage for adults is 5-10 mg once daily depending on individual case. The maximum dosage should not exceed 20 mg per day and is recommended only when it is required. Swallow the whole tablet with approximately a glass of water. Do not crush, chew or break it.

PHARMACOLOGY

Cilnidipine is a novel 4th generation dihydropyridine calcium-channel blocker (CCB). It inhibits the cellular influx of calcium by blocking both of L-type voltage-gated calcium channels in vascular smooth muscle and N-type calcium channels in sympathetic nerve terminals and causes vasodilation of peripheral resistance vessels and coronary arteries. It has greater selectivity for vascular smooth muscle. The blockade of N-type calcium channels affects predominantly peripheral nerve endings of sympathetic neurons, thereby dilating blood vessel by lowering plasma catecholamine levels. Thus, simultaneous blockade of the L-type & N-type calcium channels results in a significant reduction of the blood pressure without causing reflex tachycardia.

PHARMACOKINETIC

Cilnidipine has good oral absorption and a long duration of action. After oral administration, drug concentrations reach a peak level at 1.8 to 2.2 hours and show a long half-life of 7.5 hours. Cilnidipine has a large volume of distribution. Plasma protein binding of cilnidipine is very high i.e., 98% of the administered dose. Cilnidipine was rapidly metabolized in the liver. Cytochrome P-4503A (CYP3A) is the major human CYP involved in the dehydrogenation of dihydropyridine ring of Cilnidipine. Approximately 20% of the administered dose of cilnidipine gets eliminated through the urine, with the remainder (about 80%) being eliminated in feces.

SIDE EFFECTS

Dizziness, flushing, headache, hypotension, peripheral edema, tachycardia, palpitations, GI disturbances, lethargy, eye pain, ischemic chest pain, cerebral or myocardial ischemia, transient blindness, rashes, fever, abnormal liver function, gingival hyperplasia, myalgia, tremor, impotence. These side effects are not common in everyone but may occur in some individuals.

WARNING & PRECAUTIONS

Warnings

Do not take this tablet if you are allergic to Cilnidipine or any of the other ingredients of this medicine. Before starting the treatment, Inform your doctor if you are suffering from any heart conditions, such as untreated

Continued on Page No. : 9

CILNIP 5/10

heart failure, chest discomfort, recent heart attack, or Insufficient blood flow to the heart. Notify your doctor if you have severe liver and kidney problems. Discuss the dosage management if you are with liver or kidney problems.

Precautions

Lifestyle changes play a major role in keeping you healthy if you are taking Cilnidipine. Avoid taking excess salt in your diet and find ways to reduce or manage stress in your life. Practice yoga or meditation or take up a hobby. Ensure that you have a sound sleep every night as this also reduces your stress and hence helps in keeping your blood pressure normal. Stop smoking and taking alcohol as this helps in lowering your blood pressure and helps to prevent heart problems. Exercise regularly and take a balanced diet that includes whole grains, fresh fruits, vegetables and fat-free products. Avoid eating grapefruit or drinking grapefruit juice while taking Cilnidipine. You should consult your doctor if you need any further help to get maximum benefit of Cilnidipine and to keep healthy. Notify your doctor immediately if you are taking other medicines such as Ciclosporin, Antifungal, and Macrolides antibiotics such as Erythromycin and Troleandomycin. Notify your physician if you are pregnant, planning to get pregnant, or think you might be pregnant. This is not recommended if you are pregnant or breastfeeding. Inform your doctor immediately about your pregnancy.

DRUG INTERACTIONS

Antipsychotic Drugs: Co-administration of antipsychotic drugs with cilnidipine may result in low blood pressure. Thus, caution should be exercised while concomitant use of these drugs with cilnidipine.

Antidiabetic Drugs: Co-administration of cilnidipine with antidiabetic drugs may result in changes in glucose levels, thus, monitoring of blood glucose levels may be required.

Other Drugs: Antiepileptic drugs (such as phenytoin and carbamazepine), rifampin, quinidine, erythromycin, other anti-hypertensive drugs, and aldesleukin should also be used with caution along with cilnidipine.



कविता

गाउँ र
शहर

● तुलाधर विश्वकर्मा

गाउँमा घरहरु टाढा टाढा हुन्छन्,
शहरमा घरहरु टाँसिएका हुन्छन्,
तर
गाउँका टाढाका घरहरुमा बस्नेहरुका मनहरु
नजिक नजिक हुन्छन्
शहरमा टाँसिएका घरहरुमा बस्नेहरुका मनहरु
धेरै टाढा हुन्छन्
एकले अर्कोलाई चिन्दैनन्
त्यसैले
घरहरु नजिक भएर पनि
मनहरु टाढा हुनेहरुले
गाउँबाट सिक्नुपर्छ
घरहरु टाँसिएजस्तै मनहरु
कसरी टाँस्नु पर्छ भनेर ।

Medical Joke



Photo Gallery



PANAS Team at Nepal Pharma Expo-2024, Chitwan



Our marketing team at Sales Tour of Sudurpaschim Province



Dr. Ganesh Khadka celebrating his birthday with our Medical Sales Officer, Mr. Bijaya Singh Thapa in Dhangadi



Students' Industrial Visit



Employees' Health Checkup at PANAS



Free Health Camp at Baglung District.



Panas Marketing Team at Baglung Free Health Camp

शुभकामना

गत वर्ष २०८१ को पावन अवसरमा सम्पूर्ण नेपाली दाजुभाई दिदीबहिनीहरूमा सुख, समृद्धि र उत्तरोत्तर प्रगतिको लागि हार्दिक मंगलमय शुभकामना व्यक्त गर्दछौं।

माधव प्रसाद अधिकारी (प्रबन्ध निर्देशक) **तथा** डा. रमेश कुमार श्रेष्ठ (कार्यकारी अध्यक्ष)

पानस फर्मास्युटिकल्स प्रा.लि.

"We want work to be done."

Role of Chemistry in Environment



- Narendra Kumar Verma
(Dy. Manager-QCD/Act. Incharge-FO)

INTRODUCTION:

Chemistry is very important in our daily life, because what we do in our daily life is chemistry. Each matter including our body in this universe is made up of chemicals. We all human beings are chemists. We make use of chemicals every day and perform many reactions without thinking much about them. Many changes which we observe in our daily life are caused by many chemical reactions. We find chemistry in air, water, soil, foods, our emotions and environment, literally in everything which we can see, touch or taste. That's why it is very important to have basic knowledge of chemistry to know the world around us. Chemistry is the study of matter, its properties, why and how substances combine or separate to form other substances and how substances interact with energy. It is related with the uses of natural substances and the synthesis of artificial ones by chemical or physical reactions.

Everything in the world is the product of chemistry. Chemistry explains how food changes when we cook it, how to preserve food, how it decays, how our body makes use of the food we consume and how different ingredients interact to make food. It explains what happens when we breathe, drink, eat or just we do work or take rest. It explains softness, hardness and the purity of water. It explains cleaning action of soaps and detergents. It explains which disinfectant and mosquito repellent is safe for use. We can use chemistry to decide which cleaner is best for dishes, laundry, our self and our home. Knowing some chemistry can help us take day-to-day decisions that affect our life. It explains how use of supplements, vitamins and drugs can help or harm us. Chemistry also helps in developing and testing of new medical treatments and medicines.

Chemistry makes one chemical compound a nutrient and another compound a pollutant. Chemistry has made our life comfortable by giving us lifesaving drugs, synthetic fibers, variety of cosmetics, various types of plastics, fertilizers, pesticides and beautiful paints etc. Chemistry also give plants the best nutrients to help them in their growth.

Environment:

Environment means everything that surrounds us. It can be living or nonliving things that includes physical, chemical and other natural forces. Our environment is a huge complex system that includes the air, soil, water and the climate around us. Living things live in their environment. They continuously interact with it and adapt themselves to their environmental conditions. In

the environment there are different interactions between animals, plants, air, water, other living and non-living things.

Chemistry is the central point of discussion about environmental problems. How can we keep our environment safe and clean? What chemical processes can synthesize the things, which we can use without disturbing the environment? Chemistry can help us to understand, monitor, protect and improve the environment around us. Knowing the basic concepts of chemistry we can observe and measure air, soil and water pollution. Environmental issues such as conservation, biodiversity, pollution and renewable energy etc. have become important issues in our daily life. Many people believe that chemistry as well as chemical industries are harmful to the environment. However, currently many new advances and scientific researches in the field of chemistry are developed to invent more environment friendly applications and objects. One such example of environment friendly chemistry is 'Green chemistry'.

Green Chemistry:

It deals with the design of chemical processes and products that reduce or eliminate the use or production of substances that are harmful to humans, animals and the environment. Toxic wastes can destroy natural resources and especially the means of living for upcoming generations. In addition, many feed stocks for the production of chemicals are petroleum based which is not a renewable resource. The main question is about development and use of good alternatives. In addition, we must ensure that upcoming generations can also use these new alternatives. Sustainability is a concept that is used to distinguish methods and processes that can make sure the long-term productivity of the environment so that even our upcoming generations can live on this planet.

Principles of Green chemistry are:

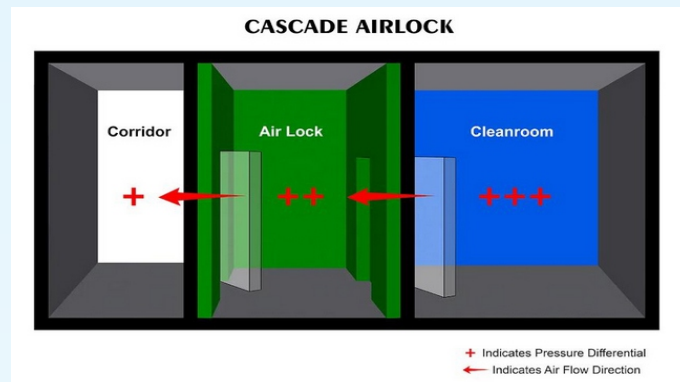
- 1) Waste prevention instead of remediation
- 2) Atom economy or efficiency
- 3) Use of less hazardous and toxic chemicals
- 4) Safer products by design
- 5) Safe solvents, minimum use of solvents which are toxic to environment.
- 6) Energy efficiency by design
- 7) Preferred use of renewable raw materials
- 8) Catalytic rather than stoichiometric reagents
- 9) Design products to undergo degradation in the environment
- 10) Analytical methodologies for pollution prevention
- 11) Inherently safer processes.

The air we breathe, the water we drink, the land we live on, and the stock of material

Continued on Page No. : 6

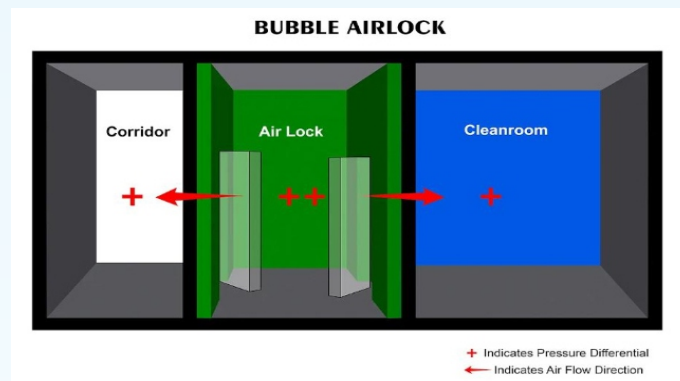
Airlocks System in the Pharmaceuticals Manufacturing Area

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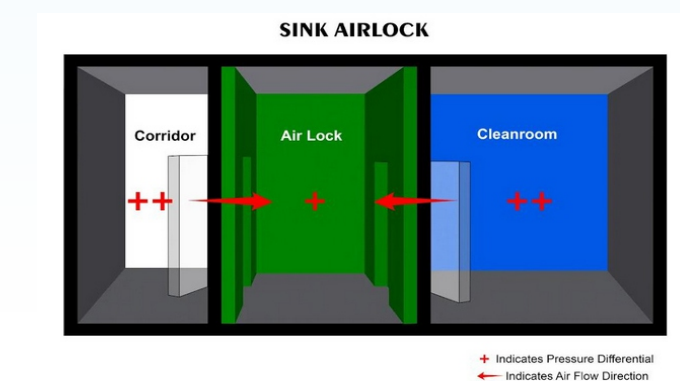
2) BUBBLE AIRLOCK:-

-These types of airlock having higher pressure inside the airlock and lower pressure both outside. This type of airlock is commonly used in injectable Manufacturing area. So, that air contaminants from outside may not contaminate drug substances.



3) SINK AIRLOCK:-

These types of airlocks has higher pressure on both the sides (i.e cubicle & corridor) of airlock so that the contaminant may not escape the cubicle. It is commonly used in manufacturing facilities of harmful substances like Poison.



1. CASCADE AIRLOCK
2. BUBBLE AIRLOCK
3. SINK AIRLOCK

1) CASCADE AIRLOCK:-

-These airlocks are very common having higher pressure on one side and lower Pressure on another side.

-In this type positive air pressure flows from the higher pressure internal zone to be airlock and from airlock to the lesser lower pressure area. This type of airlock is mainly applicable for tablet manufacturing area.

Others

EXPIRY DATE OF PHARMACEUTICALS



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It is a legal requirement that all pharmaceutical products must carry the date of manufacture and date of expiry on their label. The period between the two dates is called the 'life period' or 'shelf-life' of the drug. Under specified storage conditions, the product is expected to remain stable (retain >95% potency) during this period. In India, the schedule P (Rule 96) of Drugs and Cosmetics Act 1940 specifies the life period (mostly 1-5 years) of drugs and the conditions of storage. The expiry of other medicines has to be specified by the manufacturer, but cannot exceed 5 years, unless permitted by the licencing authority on the basis of satisfactory stability proof.

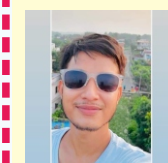
The shelf-life of a medicine is determined by real time stability studies or by extrapolation from accelerated degradation studies. The expiry date does not mean that the medicine has actually been found to lose potency or become toxic after it, but simply that quality of the medicine is not assured beyond the expiry date and the manufacturer is not

liable if any harm arises from the use of the product. Infact, studies have shown that majority of solid oral dosage forms (tablets/capsules, etc.) stored under ordinary conditions in unopened containers remained stable for 1-5 years (some even 25 years) after the expiry date. Liquid formulations (oral and parenteral) are less stable. Suspensions clump by freezing, Injectable solutions may develop precipitates, become cloudy or discoloured by prolonged storage, Adrenaline injection (in ampoules) has been found to lose potency few months after the expiry date of 1 year (it gets oxidized).

There is hardly any report of toxicity of expired medicines. The degradation product of only one drug (tetracycline) has caused toxicity in man. Outdated tetracycline capsules produced renal tubular damage resembling Fanconi syndrome in the early 1960s. The capsules have now been reformulated to minimize degradation.

Loss of potency beyond the 'life period' of the formulation depends on the drug as well as the storage conditions. High humidity and temperature accelerate degradation of many drugs. Though, majority of medicines, especially solid oral dosage forms, remain safe and active years after the stated expiry date, their use cannot be legally allowed beyond this date.

Machine Learning



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Machine learning is a branch of artificial intelligence which have become a corner stone of technological advancement, enabling systems to learn from data, identify patterns & make decision with minimal human intervention. It has revolutionized numerous industries by providing solution to complex problems that were previously unsolved. ML continues to evolve, driving innovation & efficiency in numerous fields.

Type of Machine learning

1. Supervised learning: The model is trained on labelled data, meaning the input data is paired with the correct output.
2. Unsupervised learning: The model is trained

on unlabeled data and must find patterns and relationships within the data.

3. Semi-Supervised Learning: Combines a small amount of labeled data with a large amount of unlabeled data during training.

4. Reinforcement Learning: The model learns by interacting with an environment, making decisions, and receiving rewards or penalties.

Application of Machine learning

1. Health care: Personalized medicine, medical imaging diagnostics.
2. Finance: Fraud detection, risk management.
3. Marketing: Customer segmentation.
4. Automotive: Autonomous driving.
5. Natural language processing: Language translation, chatbots.
6. Image & speech Recognition: Facial recognition, voice assistants.

Machine learning is a dynamic & rapidly advancing field, poised to transform industries & society in the coming years.