



# Milad Daru Company

Technology Keeps your Health

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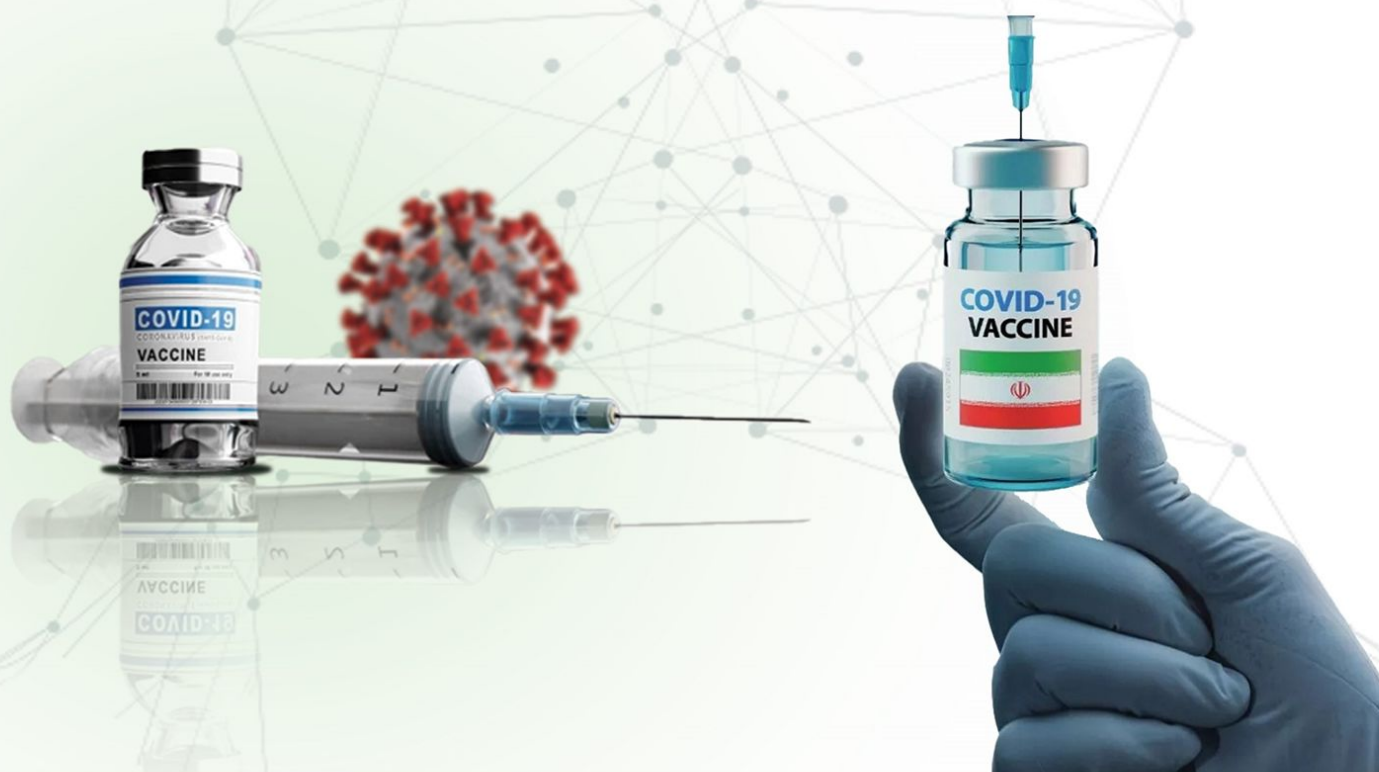
The covid-19 pandemic showed that infectious diseases are not only not under human control, but the possibility of the spread of newly emerging types and re-expansion is more likely. Many migrations, travels and trades that are taking place at the global level are one of the most important causes of the spread of the pandemic. It should be noted that infectious diseases do not know borders, have multiple origins and can be easily exploited by countries, groups and companies with specific goals. This pandemic showed that when such crises occur, the superpower countries and the main producers of countermeasures and immunity against such diseases do not pay attention to the needs and even emergency needs of other countries, whether friends or enemies. Therefore, according to the predictions of the World Health Organization, World Economic Forum, Munich World Security Conference, foundations and some global scientific and research centers, the possibility of future pandemics is more and more serious than the previous decades, and therefore, the promotion of coping capabilities is one of the most important programs in each country to promote preparedness, increase resilience and increase the stability against pandemics and epidemics . Iran with more than 150 years of history against communicable diseases is the first country in West Asia and a leading country in the production of vaccines.





With the start of the covid 19 pandemic, at the same time as the leading countries and despite all the sanctions, restrictions and threats, various Iranian institutions conducted research, research and development of a vaccine against the covid 19 pandemic. Milad Daru Company, as one of the leading institutions in dealing with the Covid-19 pandemic, in addition to researching and producing vaccines, in cooperation with some experienced Iranian companies, is building one of the most modern vaccine production factories in the world and using the latest international standards.

Milad Daru Company has created a capacity to provide the possibility of producing needed vaccines in the shortest possible time in case of viral and microbial attacks such as Corona or even animal diseases. The livestock and human vaccine production line is one of the most important parts in the pharmaceutical industry, whose quality and validation are directly related to the health of humans and society, as well as livestock and poultry. Due to the high rate of spread of various viruses in humans as well as livestock and poultry, it is necessary to inject the vaccine at the right time.



## Application of the vaccine production line

Vaccines are made in two types, human and animal. For this reason, the most widespread use of vaccine production lines is in the medical and veterinary industry. Vaccines have been among the most useful drugs for the prevention of several epidemics in the 20th and 21st centuries. There are various diseases among humans and animals that can only be prevented with vaccines. In the following, we have mentioned the most important applications of vaccine production. The existence of vaccine production lines as much as the required capacity in each country makes them ready for critical situations such as the spread of the corona virus. Benefiting from vaccine production lines makes society immune to diseases. Strengthening the immune system of people and animals is the simplest and cheapest way to prevent the spread of a disease. Vaccine production lines provide the possibility of producing different types of vaccines.

## Reasons for using the vaccine production line

Society's need for vaccines is a constant need. Although many diseases have been eradicated with the help of vaccines, many of them still persist. Therefore, the human body must always remain safe against them, and this is not possible except by repeating the vaccination. Therefore, vaccine production lines are one of the constant needs of any society that must exist in pharmaceutical factories. Many diseases, such as influenza, spread in certain seasons of the year. In these cases, the vaccine production lines must produce enough medicine to vaccinate at least the people who are most at risk. In general, the existence of a vaccine production line in a complex is both beneficial for the complex and for the benefit of that society. Prevention is known as the best way to deal with diseases, and for this reason, vaccines are always considered.





## Milad Daru Company Technology for Vaccine Production and Development:

The method of production of the vaccine in Milad Daru is in the form of a passive vaccine, in general, all inactivated viral vaccines follow a similar production period in which the pathogen is first cultured on a substrate to produce large quantities of antigens. Historically, vaccine makers have used primitive cells, tissues, fertilized eggs, and even whole organisms as a platform for spreading the virus. deactivation can be performed using chemical or physical methods or a combination of the two. A wide range of well-established and novel inactivating agents or methods have been described for successful inactivation of viruses for vaccine purposes. For example, ascorbic acid is the derivatives of Ethylamine, Psoralen, hydrogen peroxide, gamma radiation. In addition to UV, heat, and many other methods, however, only formaldehyde and  $\beta$ -propiolactone (BPL) have been widely used to inactivate human viral vaccines allowed for decades. An inactivated vaccine (or killed vaccine) is a vaccine consisting of particles from viruses, bacteria, or other pathogens that have grown in culture and then killed to destroy the capacity to produce disease.



In contrast, live vaccines use pathogens that are still alive (but almost always weakened, i.e.). Pathogens for inactivated vaccines thrive under controlled conditions and are eliminated as a means of reducing infection and thus preventing infection from the vaccine. Inactivated vaccines were first developed in the late 1800s and early 1900s for cholera, plague and typhoid. Today, inactivated vaccines exist for many pathogens, including influenza, polio (IPV), rabies, hepatitis A and whooping cough. People with weakened immune systems, such as people with HIV/AIDS or people receiving immunosuppressive therapy, may not be suitable candidates for live vaccines because of the risk of uncontrolled replication of the pathogen. Another distinguishing factor is the stability of vaccines. Inactivated vaccines are more stable and less mutant than live vaccines because they contain non-living pathogens. They are less sensitive to temperature changes, making them easier to store and transport.





## New technologies that are also divided into two categories First category:

### • use of DNA or RNA:

in the production of Pfizer–BioNTech and Moderna vaccines, the RNA of the spike protein of the corona virus has been used. In this case, instead of injecting a viral protein like Nuvax and Cuba vaccine, the person receives genetic material (mRNA) that encodes the viral spike protein, and when these genetic instructions are injected into the upper and upper arms, the muscle cells with Translation of these codes creates viral proteins directly in the body. For nearly a decade, vaccines based on this platform have been researched in other viral diseases such as influenza, hepatitis C, AIDS, and Ebola, and researchers are also researching this technology to treat cancer. The second category: introducing a part of the corona virus genome (the part that contains the sequence of genes related to the spike protein) into the human body by adding it to the genome of another virus (as a carrier) that is not pathogenic for us, to these types of vaccines They are called viral carriers. The immune system sees the engineered virus as similar to the coronavirus and can learn how to fight it. Also, genetically, they have changed the adenovirus and the genetic material is not pathogenic and does not multiply, as a complication, it does not lead to disease, also the genetic material of adenoviruses does not enter the genome of our body and there is no need to worry.minal pain, diarrhea, etc.), the vaccine should be delayed until the symptoms have completely disappeared.

# DNA

(DEOXYRIBONUCLEIC ACID)



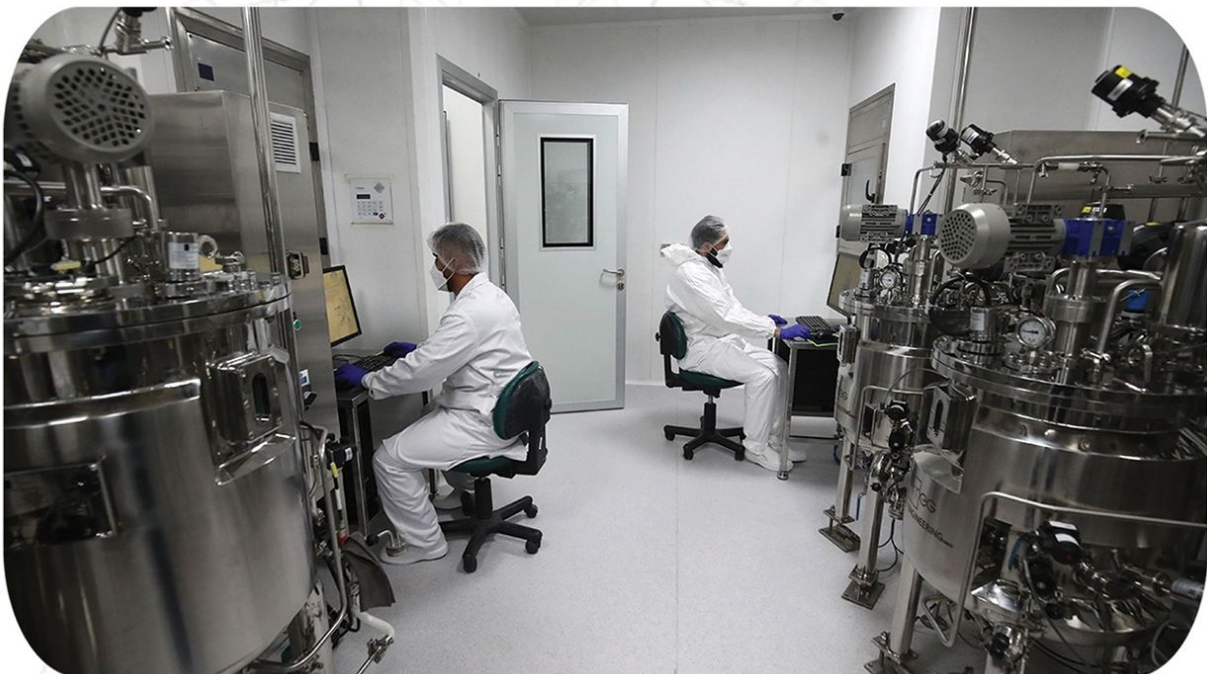
# RNA

(RIBONUCLEIC ACID)





The existence of facilities required for vaccine production in the pharmaceutical factories of the country is in the interest of the society. In Iran, where the animal husbandry industry is prevalent, animal vaccines are as important as human vaccines. Milad Daru company is professionally engaged in providing services related to production lines and Oxen.





The progress of science and technology owes to the continuous efforts of scientists and industrialists in scientific fields, and the exchange of knowledge and experience between these two important institutions is always in the service of scientific and infrastructure developments needed by mankind. Implementation of various projects increases experiences and produces new knowledge in the field of technical and management issues. If these knowledge and experiences are accurately identified, recorded and managed, it can play an effective role in reducing time, cost and increasing quality in various projects.

Milad Daru Company, as an executive group in designing and implementing system-based projects in recent years has benefited from the knowledge and experience of its managers and experts, as well as by using the experienced contractor's group, has been able to play a role in the acquisition and implementation of large national projects and to do its job in order to self-sufficiency and optimization of domestic products.

Introduction and how the level 3 mobile biological laboratory works, as an important need for timely and on-site identification, as well as various tests on biological samples.

Past experiences show that one of the most important problems in saving people's lives against biological factors is the lack of and adequate facilities. Unfortunately, the problem of sudden events, viral epidemics (such as the corona virus) and various unforeseen diseases has become an inevitable problem in today's world. During the past centuries, peace in the world has always been unstable and most countries in the world have faced instability in peace. Throughout history, Iran has always been limited by unforeseen events and viral and biological epidemics, or has been the target of countries' invasions, during which it has suffered a lot of financial and human losses.





The mobile laboratory of biological safety level 3 is a system with a special use that, according to the facilities available in it, provides the possibility of testing on all kinds of biologically contaminated samples up to level 3. This intelligent system is a portable biological laboratory that is used in the company Milad Daru is designed and built inside a standard container and autodrop(hydraulic jacks for loading and unloading).

Quick and accurate identification of polluting factors as well as their distribution location can reduce the severity of the accident and provide the possibility of faster treatment for the accident victims. The mobile laboratory for identification and diagnosis of CBRNE agents and disablers is generally designed for the purpose of performing quick and more accurate analyzes than field teams and at the site of various accidents such as CBRNE attacks, accidents in CBRNE and dangerous materials processing and production facilities. Mobile laboratories are also used to perform daily analyzes in environmental studies. Mobile laboratories are a bridge between field teams and reference laboratories. If the enemy uses CBRN agents in attacks, it is possible to document the results of the analysis of samples in mobile laboratories and use them if necessary. The equipment that is used in such laboratories is such that it is able to measure and identify all conventional and known contaminant agents in the first stage, and regarding unknown and recombinant agents, analysis is done and if necessary, samples are taken. It is prepared for further analysis and sent to the reference laboratory.

Mobile laboratories can be classified according to the type of application and their mobility.

In terms of the type of application, mobile laboratories are divided into four categories: radiation, chemical, biological, and combined, and in terms of mobility; They are divided into portable , hydraulic jacks for loading and unloading(Autodrop), stretchable and self-stretching categories.

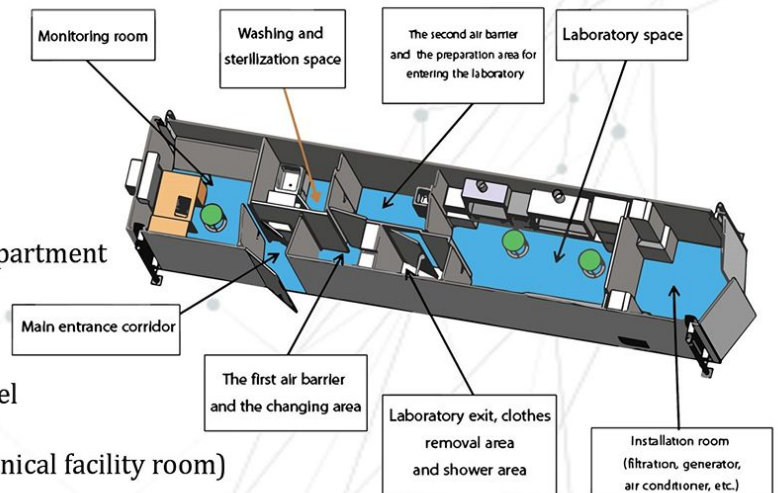
In order for the mobile laboratory to be effective when an accident occurs, it is better to at least design it as an Vehicle Maintenance Columns and maintain it well.



## Design and construction of mobile biological laboratory

**The Planetary Laboratory is divided into several sections, which include:**

- Entrance corridor
- Changing room
- Personnel
- Communication corridor with the laboratory department
- sterilization
- Washing space and decontamination of personnel
- Technical Department of Rome (Laboratory technical facility room)
- Monitoring and rest room Laboratory personnel Laboratory department



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All the internal parts of the system are supplied by air filters and the air pressure is adjusted, and communication between each part is possible only by stabilizing the air pressure. Is. The material of the internal body is completely made of steel with the ability to remove pollution, and the doors are equipped with tires under air pressure to seal and separate different parts of the laboratory from each other. This Portable laboratory system can be loaded, unloaded, installed and set up by a trained technician and it can be done in less than 30 minutes. These features make this system very suitable for use in different environments and conditions, especially in emergency situations make.

### Specifications and Features:

40 ft standard and portable container	Equipped with air pressure monitoring and control system
clean room	It has a clean air filtration system
Laminar hood connected to level three glove box	Hot and cold air systems
Intelligent Autoclave Class B, Double Door	The ability to dispose of contaminated materials and decontamination
Pass Box	Equipped with water and waste water tanks
Decontamination shower	Containing septic tank
Monitoring room and smart door system	Fire alarm and fire suppression systems
Facilities room and diesel generator (20KW h)	hydraulic jacks for loading and unloading (autodrop)



Milad Daru Hazmat Fire Brigade is classified into five CBRNE (biological, radiological, nuclear and explosive chemicals) and falls into 9 danger classes according to the DOT classification. These materials may come with features including:

Explosion, flammability, reactivity, oxidizing, toxicity, infectious, corrosive and radioactivity damage property health and the environment. These materials can be released as a solid, liquid, gas or a combination of both, including dust (particles), smoke, gases and steam.

The release of these substances can lead to problems and accidents small and large as local and even global crises. These accidents may have serious consequences for the health of humans, animals and the environment, causing serious damage to buildings, homes, property, and the environment. Accidents do not occur on a daily basis, but if they happen, they may have serious consequences, such as accidents in Iran such as the Neyshabur train accident, petrochemical accident, Arak petrochemical accident, chlorine gas leak in Ahvaz and in different countries such as the Basel Swiss Felix incident, Boro Mayak in the Soviet Union and Sarin gas spill in Tokyo. Aid vehicle equipment and paramedics to CBRNE defensive items as a defensive measure if necessary effectively protects rescuers to assist special injured and optimal control of possible conditions.



## The equipment needed to protect aid workers in the face of CBRNE incidents include:

**Special kits and medicines:** Includes medicines, basic medical equipment and special tools for treating and controlling epidemics.

**Personal Protective Equipment:** Including clothes, masks, glasses and special gloves to prevent direct contact with hazardous substances.

**Accident Sampling Equipment:** Includes sampling devices to analyze and identify hazardous substances in the environment.

**Environmental pollution removal equipment:** Tools and chemicals to clean and remove environmental pollutants caused by hazardous substances.

**Transferring infected patients to health centers with safety principles:** Includes special means of transportation to transport the injured to medical centers without increasing the risks to others.

**Environmental Defense and Relief in CBRNE:** Performing Rescue and Protection Operations in Hazardous Substances Contaminated Environments.

**Disaster Relief and Defense in CBRNE:** Providing medical and rescue services to the injured in hazardous substances contaminated environments.

**Military Relief for Patients in the Face of an Epidemic:** Specific Measures and Equipment to Control and Prevent Disease Spread Across the Population.





CBRNE ambulance is a safe and special means for transporting and treating the injured in biological and chemical incidents. This ambulance, with its special equipment, prevents the contamination of the injured and rescuers.

Among its applications, we can mention the immediate transfer of the injured from the battlefield, response to terrorist incidents in cities, treatment of patients in case of an epidemic of a biological disease, and the transfer of victims of natural disasters. The CBRNE ambulance ensures the safety chain in providing relief in critical situations.

**Natural disasters:** treatment and transport of victims of natural disasters such as floods, earthquakes and fires.

### Portable Emergency System

Due to the increasing increase in biological attacks in different parts of the world and the change in the approach of wars, the need for an agile and equipped system that can respond to the crises caused by these types of attacks as soon as possible, has become more and more important to the authorities. For this purpose, Milad Daru Company has designed and manufactured a system called Portable emergency to respond to emergency response to specific injuries when dealing with these types of accidents. Milad Daru Portable emergency system consists of four main parts:

1. Personnel decontamination department
2. Emergency and treatment department
3. Management and support department
4. Portable radiology laboratory



## Characteristics of the CBRNE ambulance of Milad Daru Company:

**Filtered and protective:** equipped with filtration systems to protect the injured and medical staff against biological and chemical pollution.

**Education and training:** medical and rescue staff equipped with special training in the field of CBRNE incidents.

**Complete equipment:** It has the medical and emergency equipment needed to provide first aid at the scene of the accident.

## Applications of CBRNE Ambulance:

**Immediate transfer of the injured:** emergency and safe transfer of the injured from the battlefield or critical areas.

**Response to biological accidents:** Treats victims of biological or chemical events and transports them to medical facilities.

**Coping with the epidemic:** In case of outbreak of biological diseases, this ambulance transports and treats the infected.





## Features of the mobile emergency system:

**Auto-drop system of containers and containers (hydraulic self-positioning):** This system allows self-deployment of devices and equipment at the scene of the accident.

**Emergency Expandable shelter:** These shelters are flexible for the development and expansion of emergency facilities.

**Inflatable column tents made of durable and light materials:** Tents are made of durable and light materials to be easy to carry and install.

**A mortuary vehicle for transporting and storing corpses:** This car is used to transport and store the bodies of the injured.

### Electric and hydraulic feeding equipment containers:

Separate containers are designed for hydraulic and electrical equipment, consumables, etc.



**9 series of tents:** including entrance corridor tents, dressing room, decontamination, dryer, examination and

triage, exit control, temporary management and support and staff rest.

**2 Container equipment:** including containers for decontamination equipment and support equipment

**4 shelter facilities:** including medicine storage and emergency nursing, double expand, laboratory and sanitary facilities

**Decontamination equipment:** sewage, fuel and liquid tanks, floor pumps, Hosereel, Hospital and Fire Fighting Clothing , fogger , ozone generators, and tent carrying compartments, etc. are used.

**Emergency unit equipment:** including stretcher beds, isolation beds, injections, CPR, surgery, temporary bed and Surgical Light , drug and equipment shelves, CBRN filtration system, etc.

**Laboratory unit equipment:** Includes full set of PCR sampling device and detector BIS01 Glove box, hood, autoclave and etc.

These features allow the mobile emergency system to provide medical and emergency services with self-deployment and high flexibility.





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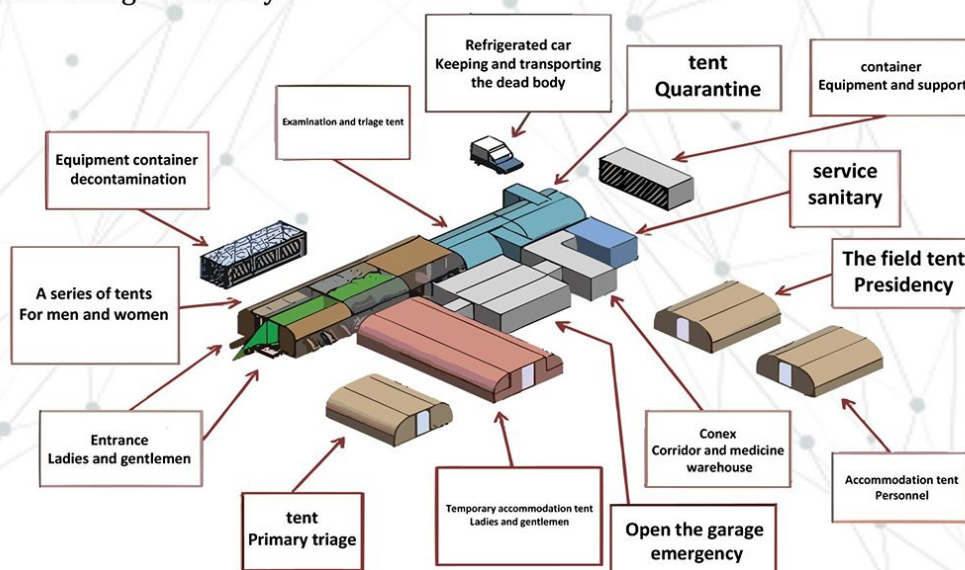
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Hospital decontamination tent in Milad Daru company, a space measuring 2.5 (m) in length, 4 (m) in width and 2 x 2 (m) in height is designed so that the medical staff after leaving the contaminated department, passing through this path, can decontaminate the clothing and personal protective equipment replace.

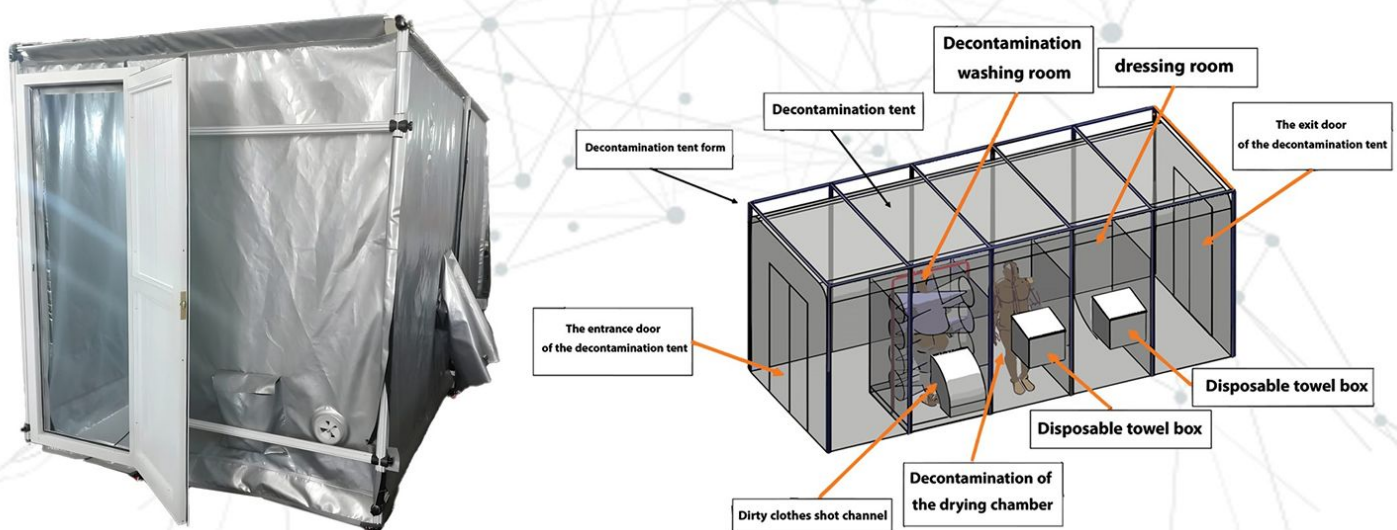
This tent is waterproof and consists of three separate sections: dressing room, decontamination and wearing clothes. In the dressing room, there is a shooting valve for contaminated clothes and equipment.

The decontamination section has a shower and nozzles that spray decontamination materials from above and around towards the person and cover the contact with the surface of the body or clothes. This section is fed by a pump mechanism and decontamination solution storage tanks and also collects the polluted wastewater and directs it to the secondary tank. The dressing area is intended for drying and putting on clean clothes.

The set of equipment that should support the tent is installed on a wheel that can be connected to the tent through pipes. This wheel is placed next to the tent. This complex is powered by city electricity and its design is such that it can be easily installed and operated and can be assembled and stored if needed.

The installation of the tent can be implemented in less than 30 minutes and does not require special expertise.

For this purpose, first the main frame of the tent is installed according to the construction instructions and the tent is installed inside it. Then the wheeled chassis on which the pumps and tanks are mounted is placed near the tent and the pipe connections are connected to each other.



This Vehicle in Milad Daru is designed to remove the pollution of NBC agents from external surfaces of equipment, personnel, facilities and places. This includes a movable cabin with decontamination tent for liquid tanks, mixers, water supply equipment cabins and cab fittings for pumps and generator cabins, fogger systems, sprinkler monitors, cameras and monitoring equipment from inside the driver's cabin, warning equipment and projectors. The car is equipped with all the individual equipment needed to protect against biological accidents as well as self-help kits for vehicle personnel.

## Pollution Removal Vehicle Specifications:

- Material Monitoring Monitor
- Fog system with 35 m throw
- Road Nozzles
- Steel Liquid Tanks
- Disinfection mixing system
- Pollution of the people.
- Washing Nozzle Under Machine
- Disinfection Solution
- Submersible pump and high pressure pump
- Hosereel and Hose Sets
- Manual Mist Decontamination
- Foldable PVC Effluent Tank
- Alarm Strip
- Shelving for equipment and supplies
- Anemometer
- Perimeter camera systems and projectors
- Truck 8 Ton
- Fire extinguisher





This car is designed and built to collect parts and radiation dust caused by the accident on the surfaces. This system is able to collect particles and radiation dust in the size of half a brick to micron-sized particles from the surfaces. This work is done manually with a hose pipe and a vacuum cleaner under the car.

The use of several stages of cyclone filters, cellulose filters and HEPA filters causes the maximum trapping of irradiated particles and prevents their dispersion. The car is equipped with traffic warning systems, types of self-control sensors, cameras, projectors and monitors.

While working with the system, there is a minimum need for the presence of the user in the environment, and the driver's cabin is equipped with HEPA filters and a lead shield. Tank washing systems completely wash the inside of the waste during emptying.



## Milad Daru Dust Suction Vehicle Specifications:

- Powerful suction pump
- diesel generator
- Canvas to collect parts and dust
- Liquid tanks
- Waterjet washing system
- The lead shield of the driver's cabin
- Washing nozzles inside the tank
- The mechanism for collecting particles and parts from the road surface
- Hydraulic mechanism for unloading
- Camera systems and monitoring of the surrounding environment and projector
- A set of hoses and hose rails
- Cyclone system to absorb particles and parts
- Cellulose and HEPA filter system
- shelving for equipment and supplies
- Windmill and anemometer
- Hydraulic mechanism for unloading
- 8 ton truck
- Fire extinguisher





This stretcher is designed and built for the purpose of carrying and keeping the injured from biological accidents. This system has many safety features that allow clean air to enter the stretcher and filter and remove contaminated air. NBC filters have been used to ensure proper ventilation inside the stretcher. This stretcher includes a suction pump that is located inside and is powered by a rechargeable battery. This pump and special filters for the stretcher space allow the incoming air to be purified through the filters and then spread inside the stretcher. One of the most important features of this isolated stretcher is Milad Daru Company , Flexibility and simple packaging.

This system is very vital and efficient due to its safety features and the ability to filter polluted air during biological accidents.

**Usage:**

Military Operations

Rescuers.Fireman.To transfer infected wounded.

Hospital and Medical Centers Department

Ambulance

**attribute:**

Protects aid workers in the transmission of infected patients.

It accelerates the response of microbial events in sensitive centers of the country.

The country's defense level is increasing in response to biological attacks.

Negative pressure

The air pump is equipped with an NBC air filter to enter and exit air on the stretcher by rechargeable battery.

Flexible and easy to pack and carry



These cover (NBC) made by Milad Daru Company are used to move corpses infected with biological and chemical nuclear agents. It isn't possible to use ordinary bags when the presence of traces and contaminated materials on the surface of the body or secretions such as blood, saliva, etc., increases the possibility of the spread of contamination and the involvement of other people in the contamination.

**Waterproof and airtight:** These Cover are waterproof and airtight to prevent the entry of contaminated materials and the exit of dangerous gases from the bag.

**Decontamination ability:** after use, the Cover have the ability to decontamination and can be used again to carry the body.

**Gas filtration:** The filter is considered on the wall of the cover. This filter filters the gases that come from the body and exits through the outlet.

Use these cover in emergencies and critical situations where you need to prevent the transmission of contamination to other people. It is very vital.

## Attributes

1. Waterproof and resistant body
2. Shipping categories
3. Airtight zipper and tape
4. 3 layer fabric
5. Weight: 3 kg
6. Dimensions: 30 x 65 x 200 cm
7. Decontamination capability
8. Installation location of the deceased
9. The possibility of viewing the face without opening the cover
10. Liquid absorbent pad
11. Filter installation location





Milad Daru company, by building a decontamination set for people (tents, pump tanks, etc.) for chemical, microbial or radiation accidents with intentional or unintentional origin, which is one of the potential biological accidents in the world today, has various equipments to deal with Such events are designed and built. Decontamination tents are used to wash the body surface or clothes of people who have been exposed to CBRNE incidents. There is a possibility of contamination caused by these incidents, so the contaminated wastewater must be properly collected and managed. In this tent, the decontamination liquid is sprayed on the person's body through special nozzles, and then the polluted wastewater is directed to the waste water tank by the basin and the skid pump and transferred to disposal or destruction. These tents are designed and produced in two types of wind column and rod to be efficiently and safely cleaned from pollution and reduce the risks of CBRNE incidents.

### **specs:**

The pump system, the tank, decontamination, and garbage collection.

Equipped with water heater and decontamination solution

Source: City Electricity

Frame: Metal-inflatable column

size: 4\*2.5 - 2.2(m) altitude

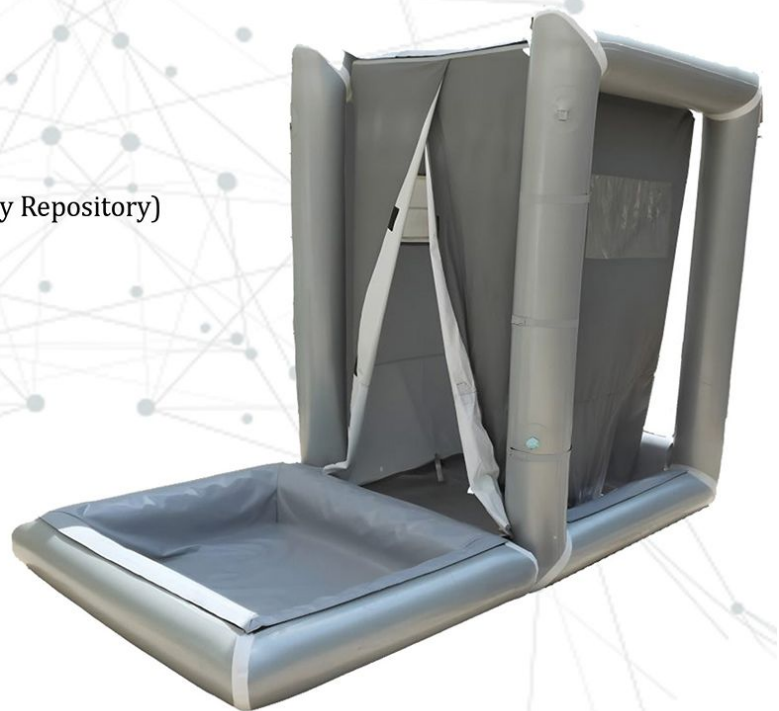
Approximate weight of tent + frame: 70kg - 20kg

Weight of decontamination equipment: 40kg (Empty Repository)

Tanks Capacity: 230 lit

Easy to assemble and carry

Decontamination



Stretcher of NATO, which is made by Milad Daru Company, whose method of operation is as follows:

Pull the stretcher from the sides to extend it. Its handles rotate 90 degrees outward to engage its locks.

Using the soles of your feet, stabilize the bottom lever of the stretcher and press to lock the stretcher.

To close the stretcher: two people turn its handles counterclockwise. At the same time, move the lower lever backwards so that its latches are released and the stretcher is closed.

Important note: after collecting the stretcher, transfer it in a carrying bag and place it in a place where there is no possibility of puncture or tear.

Decontamination of the stretcher: The best material for decontamination depends on the type of contamination, but you can use antiseptic or antibacterial materials.





The fogger is a device with a gasoline engine made by Milad Daru company, which sprays micron-sized disinfectants in the form of fog. The fogger is known for destroying SARS Cov-2 viruses and is used to disinfect the work space to reduce the risk. Pollution is used.

According to environmental protection guidelines, it intelligently cleans the working space of employees. Using this device is the best way to reduce pollution in public spaces.

### **This device can be used in the following spaces:**

1. Kitchen and restaurant areas of the bathroom
2. Public toilet pool
3. Electrical Switches
4. office Equipment
5. Schools and universities
6. Water fountains
7. Shelves
8. religious places
9. Closed environments such as inside subway, bus, train, airplane
10. Railings of escalators in public places



Title	Description
Engine system	Pulse Jet
Engin power	22kW
Fuel tank volume	2lit
Fuel consumption	1.5 to 3 liter per hour
Fuel type	Petrol
Decontamination tank volume	8lit
The weight of the device	10Kg
Dimensions	34*30*130cm

## MRC200P :

MRC200P Decontamination Powder of Milad Daru Company is used to decontamination of all chemical agents and biological agents and causes their destruction and destruction. It is used to decontamination of the surfaces of military equipment and tools, the surface of airplanes and ships, buildings and places where troops are stationed (never be used to decontamination of the skin).

How to use: Mix the powder with 140-180 liters of water and spray it on the desired surface.

Storage conditions: Store in a dry and cool environment with proper ventilation and away from other chemicals.



## BAWS-06+ :

BAWS-06+ is a warning device for biological agents. And it works automatically. This device is installed in a fixed place on the wall and samples the air at predetermined time intervals. After the analysis, if the biological pollution in the surrounding air increases abnormally, it informs the user through audio and visual signals. Using modern science and expertise, experts have prepared this device for use in different places for easy use by all people.

Title	Description
Allergic	100 Biological particles per liter of air
Sample airflow	14 Liters per minute
Sampling Time to Announce Response	200~Seconds
Dimensions	23*40*42cm
Weight	13Kg
Local Detection Based on Sampling on Ambient Air	+
Use of ultraviolet semiconductor light source	+
Feeding the city electricity	+





The mobile sample and identification of biological agents of Milad Daru Company using microbial culture method is a complete set to identify bacterial pathogens suspended in the air and on the surface. In this device, the culture method is used as a standard method to detect pathogen data. It is able to provide a suitable medium for crops and pathogens by transferring the air of the contaminated system to the dry water of the cultivation environment. After the sampling operation, Khashab was transferred to an adjustable incubator (30-37°C) and it was determined that it becomes possible in the environment after cultivation. A multiple culture medium is intended for this product that contains bacteria based on colony color. In this way, the colony of each species of *S. epidermidis*, *S. aureus*, *Enterococcus*, *Stenotrophomonas*, *Acinetobacter*, *Pseudomonas*, *Candida albicans*, *Nonas*, *Protas*, *Klebsiella*, *E. coli*, *S. saproplaiticus* with different colors grows on the medium. Also, color-forming culture media for identifying *Salmonella*, *Listeria*, *Candida*, *Vibrio*, *Percinia*, *Shigella*, *Bacillus*, and *Staphylococcus* bacteria can be provided for this product in multiple and separate forms. All this collection is embedded in an impactable bag and can be carried by a person.

Title	Description
Sampler and Mobile Biological Detector	Culture of bacteria and pathogenic yeast
Steel Sampler	Air sample transfer on the culture medium
Incubator 37 °C	8*8*25cm
Magazines and media	growth media
Identifiable factors	9 Agents-Increased ability to identify more factors
Dimensions	18*30*40cm
Approximate weight	10Kg
Portable Bag	+



Milad Daru Company is a complete collection of biologic identification devices using Real-Time PCR to identify bacterial and viral pathogens in different biological samples (water, blood serum(Serum), air, food, etc.) .This system is able to reproduce the probability and concentration of the pathogen in the tested sample by multiplying a specific gene of the desired pathogen and display it on the laptop screen in real time. Using this system, several factors can be identified for 48 people in about 65 minutes. The necessary supplies and equipment for extracting DNA from the sample are also located in this system. In this system, Bluetooth connectivity is considered to create a network with other identification bags. All this collection is placed in a waterproof and shockproof bag and can be carried by a person. Materials and consumables are packed and delivered in a separate portable and waterproof bag.

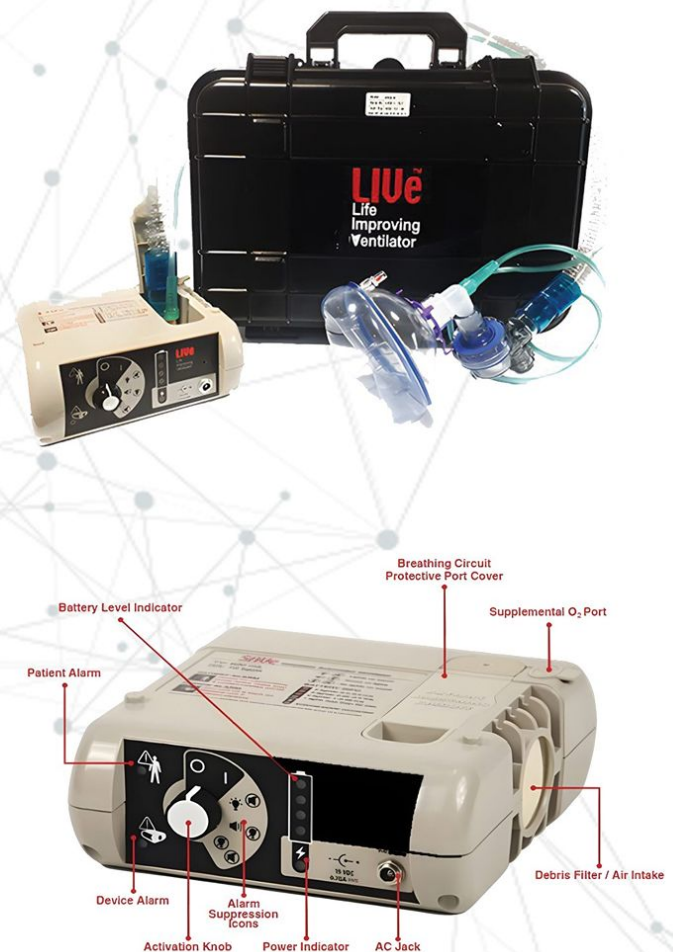
Title	Description
48-channel thermocycler	Perform Real-Time PCR reaction
Microcentrifuge	DNA Extracion
Thermoblock	DNA Extracion
Sampler(3sizes)	Real Time PCR Sampling and reaction
Laptop	Observation of materials and concentration of agents
Refrigerator 4 degrees Celsius	Material storage Real Time PCR
Identifiable factors	It identifies more factors
Sampler rack	Includes 3 sampler tip sizes
Vial rack	-
Ability to work with city electricity and car battery	-
Direct key box	-
Dimensions	25*40*75cm
Approximate weight	33Kg





Ventilator is a medical device designed and manufactured by Milad Daru Company and helps people with breathing problems. This device is able to artificially introduce fresh air into the patient's lungs. Ventilators are used in cases such as severe respiratory diseases, trauma incidents, neurological diseases and post-surgery conditions. This device is automatic, portable and has a rechargeable battery. This feature allows doctors and paramedics to attend to the injured more quickly. This device, with only one on/off switch and automatic lung volume detection system, makes it easy for the general public to use and avoid problematic errors. Minimizes This device is the best choice for sensitive situations where access to compressed gases and advanced devices is not possible. The weight and dimensions of this device are designed in such a way that it can be easily carried and this device works without an oxygen capsule.

Title	Description
Functional mode:	DC-CMV (Dual Contol Continuous Mendatory Ventilation)
Breathing:	Primary control: time Secondary control: Pressure
Technology	Turbofan
How to use:	invasive and non-invasive
Pump motor output:	Maximum 18 liters per minute
Expiratory flow volume:	600 ml
Respiratory rate:	10 breaths per minute
Ratio of inhalation to exhalation (I:E):	1:2 (2.25 seconds to 3.85 seconds)
FIO <sub>2</sub> :	21 to 100 percent
PIP :	38 cmH <sub>2</sub> O
PEEP :	less than 2 cmH <sub>2</sub> O
Pressure sensor range:	0 to 40 cmH <sub>2</sub> O
Dimensions:	6.2x16x17 cm



This device saves the patient by applying an electric shock in time at the beginning of a heart attack. The operation of this device is completely automatic. At first, it checks the patient's heart rhythm and if necessary, delivers an electric shock to the patient. After applying the electric shock, the device verbally guides the rescuer to perform CPR and first aid. Therefore, an expert is not needed to use this device and it can be used in critical situations. Milad Daru automatic electroshock device can be used to revive patients over 8 years old (more than 25 kg) with standard electrodes and patients 2 to 8 years old (less than 25 kg) with special electrodes for children.

Title	Description
Specifications :	Having electrodes for children Accurate ECG detection algorithm with high sensitivity Current-based defibrillation technology in order to have the most effective treatment Provide improved visual and verbal instructions Ability to record data up to 3 hours More than 25 user languages and Persian language support
Device waveform:	Biphasic, flow dependent
The amount of energy applied by the device (adults):	170-270 joules
The amount of energy applied by the device (children):	50-75 joules
Shock sequence:	Fixed, incremental and programmable (device settings)
Device charging time:	Usually 10 seconds and maximum 15 seconds
Duration of ECG analysis:	10 seconds
The dimensions of the contact plate of the electrodes	166 square centimeters (adults), 86 square centimeters (children)
Battery type:	Alkaline
Device capacity:	Up to 210 shocks
Device monitoring capacity:	up to 20 hours
dimensions of the device :	11.2 x 30.4 x 30.1 cm





## Radiation dosimeter :

This device is used as a vital tool for measuring ionizing radiation in different environments. These environments include radiology departments, medical departments, radiation laboratories, emergency units, border, customs inspection, as well as special industries such as agriculture and pharmaceutical services. This device measures the equivalent environmental dose of gamma and X-rays. The measured data can be transferred to the computer.



## Rapid Detection Kits :

Advanced immunodiagnostic test kits are designed to accurately diagnose infectious diseases, tumors, genetic conditions, fertility issues, and veterinary health. These products have been developed with a strong emphasis on durability and user-friendliness, making them valuable tools for healthcare professionals. These diagnostic kits play an important role in identifying diseases and provide the possibility of accurate classification of diseases and suitable treatment strategies for patients. These kits play a significant role in the rapid diagnosis of conditions such as AIDS virus, HPV, tuberculosis, monkey pox, malaria and COVID-19.



This first aid kit is designed to serve 20 people. This bag contains the necessary equipment to prevent bleeding, clean and dress the wound, and remove pieces of wood or other objects embedded in the skin.

## Main features of the bag:

**Sturdy structure:** The main frame is made of strong aluminum profile, which adds strength and

**lightness to the bag.** **Inner material:** The inner material of the bag is made of three-layer board with

**synthetic leather coating.** **Interior space:** The bag has the space needed to store first aid items inside.

**Bag door:** interior elasticated, this allows quick access to the items inside the bag.

This group first aid bag is suitable for places such as offices, factories, intercity emergencies and remote areas, schools, sports halls and sports such as: mountaineering (a good hiker must also be a good rescuer), agencies Airplane and other places with specified number of people.

## Items inside the bag include:

1. Small and large dressings  
(roller bandages and bandages)

2. band aids

3. Betadine

4. Pink Angiocath

5. Pocket handkerchiefs

6. Non-sterile cotton

7. Mask

8. Latex gloves

9. Knee brace and wrist brace Gauze

10. Alcohol pad

11. eye pad





Milad Daru Company TLD (Thermo Luminescent Dosimeter) Card is a type of detector used for radioactive radiation dose measurement. TLD Dosimeters measure ionizing radiation through the phenomenon of Thermoluminescence, where the irradiated material emits visible light upon thermal stimulation.

### **Here are some features and advantages of TLD :**

**Reusable:** TLD dosimeters are depleted after reading the dose at a given time and can be used again for measurement. This particular feature allows multiple measurements to be made in a period of time.

**Resistant to environmental factors:** Light, temperature and humidity Don't affect the dosimeters. This feature makes these dosimeters used in different environmental conditions including in hot and humid areas

**Measuring range and accuracy:** These dosimeters have a good sensitivity in low to high doses due to unsaturation. This feature makes these dosimeters used accurately in dosimetric applications.

**Appropriate medical and radiation treatment centers :** These dosimeters are used in medical and radiation treatment centers to measure radiation doses, because they have high accuracy and reusability.

**Durability:** TLDs have a long shelf life and are used for a long time without degrading the quality of their measurement.



It is a device manufactured for Milad Daru Company. to compress and help radial artery homeostasis after a transradial procedure. which, according to the doctor, is closed on his wrist. At the same time, the patient should avoid strenuous activity of the arm which is receiving treatment. If above homeostasis and turn the turn cap to adjust the cushion pressure accordingly.

### Components:

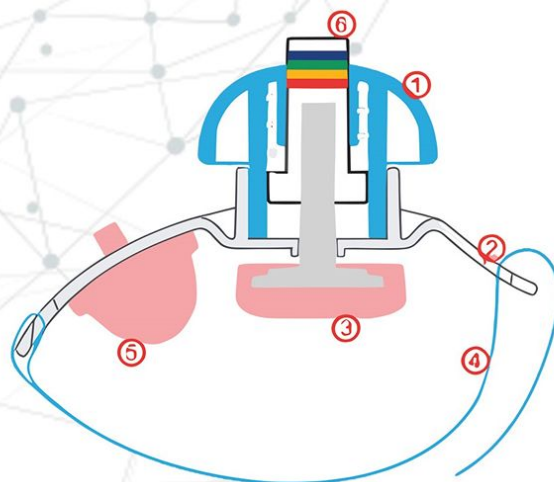
1. Turn Cap
2. Wrist Plate
3. Cushion
4. Band
5. Assistant locking cap
6. White marker (reference pressure 90-150 mmHg)

Blue marker (reference pressure 125-185 mmHg)

Green marker (reference pressure 155-205 mmHg)

Yellow marker (reference pressure 175-215 mmHg)

Red marker (reference pressure 195-295 mmHg)

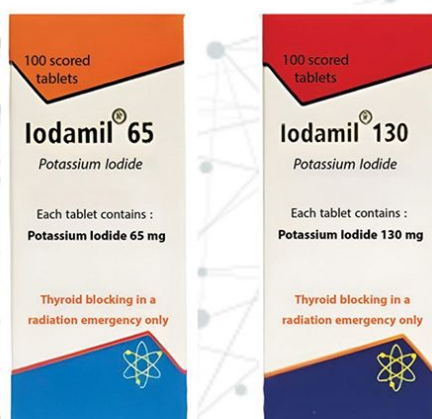




The self-aid bag of special NBC drugs (MSAK) made in Milad Daru in the event of chemical accidents, including chemical wars or dangers caused by the release of chemical gases in unexpected or biological accidents, some drugs or individual equipment, in the initial conditions can be The person involved in the accident should help. For this purpose, the well-known bag contains special medicines and powders to provide the ability to provide first aid to people during MSAK, which is responsible for individual aid when exposed to a chemical agent. benzene, alcohol, carbon dioxide, chloroform, etc. Special drugs to deal with biological and nuclear chemical agents include: Self-injections: atromil - axomil - cambomil To treat poisoning with nerve agents. Isoamyl nitrite inhalation ampoule: They are used to treat cyanide poisoning and blood agents. Decomil powder: for the purpose of decontamination of combat equipment, clothes and weapons. Decoderm powder: It is used to remove pollution from the skin in case of local pollution. Promil cream: protection of the skin against the penetration of chemical agents.



Milad Daru Company Potassium Iodide tablet is a protective drug that is used during the release of nuclear radiation. This drug should only be used if the official authority of the country declares that the release of existing radiation is present. In this emergency situation, a lot of radioactivity may be released into the air. This pill protects the thyroid gland from radioactive absorption and protects it from harmful radiation.



Adults (over 18 years old)	Take two pill daily (130mg)
People 12-18 years old or weighing Minimum weight 70 kg	Take two pill daily (130mg)
People 12-18 years old or weighing at least 70 kg	Take one pill daily (65mg)
Children 3 to 12 years old	Take one pill daily (65mg)
Children from 1 month to 3 years	daily (32/5mg)
Babies up to one month	daily (16/25mg)

Children 1 month to 3 years should consume the equivalent of 4 teaspoons of the prepared solution. babies should consume the equivalent of four teaspoons of the prepared solution for up to one month. Potassium iodide tablets can be taken as tablets, crushed or mixed with a large amount of liquid. When mixed with liquids, care should be taken to ensure that the entire dose is taken correctly. When the use of this drug is announced, a dose should be taken every 24 hours, which is based on the age and weight of the user. Pay attention to consume more than the recommended amount.



emergency ration in three flavors for three meals) Emergency ration for limited environmental conditions:

These rations are designed for emergency situations. When food and water resources are limited Every package is great It has the equivalent of 1500 kcal of energy and its contents are divided into 3 types: Simple tonic ration This type of ration contains various foods that make energy. Nut Granulated Diet This type of diet contains nuts and nutrients that are rich in nutrition. The form of ration is the type of ration that contains chocolate or similar substances that provide its energy and in the conditions that it can be converted to. All these rations are formulated in such a way that they can be eaten in difficult and low water conditions and make it possible to lose less water from the body. The special packaging of these rations has a long shelf life. These products are suitable for use in several unexpected explosions and harsh critical conditions.

A daily individual operational ration

(breakfast, lunch, dinner, snacks – heating bags and other essentials)

Energy more than 3100 calories

Weight 1.3 to 1.5 Kg

Lasts more than a year

Foods

Energy	500 Kcal
Protein	8%
fat	25.5%
carbohydrate	58%
fiber	2%
humidity	6.5%





A bio-positive pressure suit is a vital means of protection for people who are exposed to hazardous liquids and particulate matter. This dress is made of materials resistant to water and liquids to prevent dangerous substances from entering the dress. The panoramic mask used in this dress allows the user to see fully. Built-in filters allow the user to breathe clean air. This dress has straps that the user can quickly get out of the dress in case of emergency.

No.	Components	count
1	Costume Set	1
2	Battery and Pump	1
3	Battery Recharge	1
4	Air Tube	1
5	Filter	2



## Personal Protection Kit

This private mask for Milad Daru company filters the outside air with NBC filters and creates healthy air for the person. Its thick panoramic lens protects you from contact with contaminated particles.

Its weight is light and its material is natural and resistant.

The air valve reduces the air and heat inside the mask so that it does not get into trouble.

Space mask with NBC filter with 95% particle filtration to prevent inhalation of toxic gases and vapors, restores breathing easily and naturally. This filter protects the system against vapors, chlorine, benzene, alcohol, carbon dioxide, chloroform, etc.



## Ripamil

Ripamil spray is used to protect open areas of the body from stinging and disease-carrying insects such as mosquitoes (malaria and dengue fever, etc.), flies, ticks, midges, sandflies, lice, etc.

, both indoors and outdoors, including natural environments, beaches, forests,

and near rivers. A single application of this product keeps the skin

protected from insect bites for a minimum of 6-4 hours. Note:

This product, with a higher active ingredient percentage,

is also applicable to protect domestic animals.





# About us :

## Milad Daru Company

Knowledge-based Milad Daru Company officially started its work in 2013 with motivation of meeting the needs of the country and several years of experience in the procurement and distribution of drugs and emergency equipment in the field of CBRNE. The CBRNE products of this company are provided in the personal protection equipment, detection and diagnosis, relief, decontamination, prevention and treatment sectors. With the start of the covid-19 pandemic, Milad Daru Company, as one of the leading institutions in dealing with the corona virus, in addition to researching and producing vaccines, in cooperation with some experienced Iranian companies, started building one of the most modern vaccine production factories in the world and using It has met the latest international standards, and this company has created the capacity to produce human vaccines and even livestock vaccines in the shortest possible time in case of viral and microbial attacks such as the corona virus. Milad Daru, relying on new technologies and observing safety and environmental principles in the field of medicine, biological sciences and health, tries to be a reliable support for the self-sufficiency of Iran.



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