

Miner Undersuit

The Miner Under suit is a special suit for [ANT Power Armor](#) used by the [Mining Guild](#) beginning in [YE 41](#).

History

In [YE 41](#) When creating their [ANT Power Armor](#) for simple digging work, the [Mining Guild](#) became worried about it being stolen or used for evil, and they were concerned with the control of the Power Armor. The second concern was for **Bathroom Accidents**¹⁾. So they began working on a suit that would prevent concerns from happening. Alongside the Power Armor, the Undersuit was also introduced, and given to Miners as part of their standard equipment. As time passed, some updates to the suits like the use of AR tech to allow miners some semblance of customization came to be. In addition, the focus on comfort and usefulness over style was also made, despite the use of AR though.

Later on during an expedition to [Crystaria](#) in search of ice to be made into water. The extreme conditions and hazardous environment posed significant risks to miners. They knew that there had to be multiple planets as extreme as that, so they went back to the drawing board and in collaboration with leading scientists, engineers, and mining experts, the Undersuit in particular was designed to protect miners and enhance their operational capabilities in these hostile settings.

Since its initial release in [YE 41](#), the Undersuit has undergone multiple iterations and updates, driven by advancements in materials science, robotics, and safety regulations. Each update focused on improving durability, increasing mobility, enhancing thermal insulation, and integrating the latest control systems technology.

Then in [YE 42](#), had a recent update to both the Power Armor, as well as Undersuit, incorporating Geist updates, HUD system improvements, and new glove-mounted controls. These updates further improved miner safety, efficiency, and situational awareness during mining operations. The Mining Guild continues to invest in research and development to ensure the continued use of both the ANT power armor, and the undersuit remains in use, and exhibiting mining safety and technology. Additionally, a connection to the [BW-E-2 Anima System](#) was created, which became publically available in [YE 42](#).

Current Time

In [YE 44](#) was the start of the [Mining Guild Contingent](#), as a result of a new venture, to places outside the Kikyo Sector. Its leader, [Kali Firewalker](#) has ordered a new update, to further add to the miner safety, along with special variants for the Power Armor.

Design

The Undersuit, is designed to allow for the connection and control of a [ANT Power Armor](#), first and

foremost, but the Miner's comfort was of equal importance. To that end It was designed with a similar appearance to that of a 🧊 [drysuit](#)

Material

The Under Suit is constructed using a combination of advanced materials to ensure durability, flexibility, protection, and thermal insulation. The outer layer is made of Aramid Fibers²⁾ used to provide exceptional strength and resistance to cuts, abrasions, and punctures. This can also withstand harsh environmental conditions. The Mid-layer is made of specialized heat-resistant fabrics like 🧊 [Nomex](#), which can withstand high temperatures without melting or igniting. In addition, the undersuit features chemical-resistant coatings that provide an additional layer of protection against hazardous substances and corrosive chemicals.

Extra Reinforced padding and impact-absorbent materials are strategically placed in vulnerable areas to minimize the risk of injuries from falls or impacts. The inner layer consists of moisture-wicking and breathable fabrics to keep the wearer cool and dry, even during physically demanding tasks or in hot working conditions. The material is also made to maximize mobility while ensuring the miner's safety in harsh environments and is a stretchy, flexible material that allows the suit to stretch with the user.

Color Customization

The suit is primarily available in multiple hues of coloring, which were specific to each user. The special use of individual AR allows the miners to visually see their outfits in colors, and decor of their choice. However, this is an overlay that only they can see. Non Mining Guild members will only see certain rank based colors. Command- Gold³⁾ Magma- Red⁴⁾ Blue- Ice⁵⁾ Brown Ground⁶⁾

Mobility

The Under Suit is designed to provide maximum mobility to the wearer while ensuring optimal safety and comfort. Its ergonomic design incorporates flexible joints and lightweight materials that allow for unrestricted movement, enabling the wearer to navigate and work efficiently in industrial environments.

Systems

The Under suit incorporates state-of-the-art control systems, allowing miners to operate their [Power Armor](#) with precision and efficiency. These systems include:

Neural Interface

The Undersuit is equipped with a [Geist neural interface technology](#) that allows seamless communication between the miner's brain and the Power Armor. It enables intuitive control of the Power Armor's movements and functions through neural signals, reducing response time and enhancing overall operability.

HUD System

The Undersuit features a Heads-Up Display (HUD) system that provides real-time environmental data⁷⁾, vital signs, power status, equipment diagnostics, and communication feeds. Miners can access vital information within their field of view, increasing situational awareness and improving decision-making during mining operations. The HUD allows miners to monitor their surroundings and crucial data without obstructing their vision.

Glove-Mounted Controls

The Undersuit incorporates additional controls, via glove-mounted controls, enabling miners to manipulate the Power Armor's articulated limbs, activate mining tools, and interface with the armor's communication systems. The control design ensures ease of use and enhances the miner's responsiveness in demanding mining environments.

Life Support

The Under suit, is built to meet the Hazardous Environment Protection and Adaptation Standard (HEPAS-1) classification code. This classification signifies the under suit's ability to withstand and protect miners during mining operations in extreme and hazardous environments, including ice, asteroids, and underground sites. The HEPAS-1 classification ensures that the under suit meets stringent safety standards and is equipped with advanced features to mitigate risks associated with these environments. The Mining Guild continuously evaluates and updates the under suit's design and technology to enhance safety and performance. Over the years, the under suit has undergone several significant updates to address emerging challenges and incorporate cutting-edge advancements. These updates have included improvements in materials, enhanced thermal insulation, and upgrades to control systems.

Water Systems

When needed, Recycled water from purification is located in the suit's tanks and is pumped to an attached helmet or induction port (straw) if the helmet has it.

Environmental Control System

The undersuit is equipped with an advanced environmental control system that regulates temperature, humidity, and provides breathable air. This allows miners to work comfortably and safely in a wide range of environments, including extreme cold or low-oxygen conditions.

Emergency Systems

In the event of a catastrophic failure or loss of atmosphere, the undersuit is equipped with emergency life support systems. These systems can provide a limited supply of oxygen for a set duration, allowing miners to safely navigate hazardous situations and reach safety. In addition, the Under suit, is equipped with distress beacons and built-in communication devices. These features allow wearers to quickly signal for help and provide their location, ensuring a rapid response to potential accidents or emergencies.

Waste Management

From the groin to the rear end of the inner layer is a special gel-lined pad. At the front end are multiple pockets, designed to catch liquids that can clean its user's processes with a specially designed Mining Guild's preferred waste management services, in addition to using nanomachines and gravity. When waste is detected by the suit systems, the urine is purified into drinkable water, as well as body sweat. It also deals with solid waste by transporting it elsewhere to be removed later.

Cleaning Systems

In addition to the waste system, the technology also has the job of keeping the user's "region" clean of sweat and dead skin as the Under suit is designed to be worn without undergarments.

Power Systems

Power Distribution and Management

The under suit is equipped with a power distribution and management system that efficiently channels power from the mining suit's power source to various components, including the neural interface, environmental controls, and the heads-up display. This ensures optimal power allocation and extends the operational lifespan of the under suit.

Protection Systems

Enhanced Protection and Shielding

The under suit incorporates reinforced plating and shielding in key areas, such as the chest, back, and limbs to protect miners from falling debris, impacts, and other hazards that may occur during mining operations. This ensures optimal safety and reduces the risk of injury.

Heat Dissipation and Cooling System

Working in extreme temperatures is a common challenge in certain mining environments. The undersuit includes active thermal regulation systems that monitors the wearer's body temperature and adjusts accordingly to maintain optimal comfort. This system can dissipate excess heat or provide insulation in colder environments, ensuring the wearer remains comfortable during extended use.

Moisture Management

The Under Suit incorporates moisture-wicking fabrics that draw sweat away from the body, promoting quick evaporation and preventing discomfort caused by moisture build-up. This keeps the wearer dry and comfortable, even during physically demanding tasks.

Separation Support

Instead, the heat is transferred in the case of a Separation Miner to expose Separation and those cold-blooded species to the heat, allowing comfort.

Movement Support

The Under Suit utilizes smart materials and innovative joint designs to allow for maximum flexibility and a wide range of motion. This ensures that wearers can perform tasks efficiently without feeling restricted, promoting productivity and reducing fatigue.

Comfort and Mobility

The Industrial Power Armor's Undersuit is designed to prioritize the comfort and mobility of the wearer:

- **Flexible and Lightweight Materials:** The undersuit utilizes lightweight materials that offer maximum flexibility, allowing the wearer to move freely and perform tasks with ease. The materials also provide breathability to prevent discomfort caused by excessive heat and moisture buildup.

- **Ergonomic Design:** The undersuit is ergonomically designed to ensure a comfortable fit and to accommodate a wide range of body movements. It includes strategically placed stretch panels and adjustable straps for a customizable fit for users of different sizes and shapes.
- **Enhanced Joint Mobility:** The under suit incorporates articulation points and flexible joint systems to optimize mobility. It allows for a full range of motion, enabling workers to perform physically demanding tasks without hindrance.

Safety

The primary goal of the Industrial Power Armor's Undersuit is to ensure the safety of the wearer. It incorporates several safety features, including:

- **Impact Resistance:** The undersuit is constructed with a highly durable and impact-resistant material, capable of withstanding potential impacts and collisions during industrial operations.
- **Heat and Flame Resistance:** To protect the wearer from heat and fire hazards, the undersuit is made from advanced fire-retardant fabrics that resist heat transfer and prevent flames from spreading easily.
- **Chemical Protection:** The undersuit employs specialized materials and coatings to provide resistance against corrosive chemicals and hazardous substances commonly encountered in industrial settings.
- **Electrical Insulation:** The undersuit incorporates electrical insulation to shield the wearer from electrical hazards. It prevents the flow of electric current, reducing the risk of electrical shocks or short circuits.

Maintenance and Care

To ensure the longevity and effectiveness of the Mining Guild's Power Armor Undersuit, miners are advised to follow these maintenance and care guidelines:

1. **Regular Inspections:** Miners should perform regular inspections to check for any signs of wear, tear, or damage. Any issues discovered should be reported and addressed promptly.
2. **Cleaning:** The under suit should be cleaned regularly using approved cleaning agents and techniques to remove dirt, dust, and contaminants. Special attention should be given to areas where environmental seals are present.
3. **Component Checks:** The power distribution and management system, neural interface, and environmental control should be checked periodically for optimal performance. Any abnormalities or malfunctions should be reported and repaired by authorized technicians.
4. **Storage:** When not in use, the under suit should be stored in a clean and dry environment, away from direct sunlight and extreme temperatures. Proper storage ensures the longevity of the undersuit's materials and components.

OOOC Notes

- [Charaa](#) created this article on 2019/09/05 18:27.
- Approved by Ametheliana November 19 2019
- [Charaa](#) updated this article on 2023/10/01

Products & Items Database	
Product Categories	clothing
Product Name	Mining Undersuit
Manufacturer	Mining Guild
Year Released	YE 41
Price (KS)	50.00 KS

1)

in terms of not making it

2)

a type of abrasion-resistant fabric, also Kevlar is one

3)

Overseers, wear this color

4)

Those working in volcanic, or hot environments

5)

those working in ice worlds, or asteroids with lots of ice

6)

Basic Miner, works under ground, or asteroids without ice

7)

Such as, atmospheric conditions

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Last update: **2023/12/21 04:21**

