MUST ACCOMPANY THE AIRBAG SYSTEM WHENEVER SHIPPED OR TRANSPORTED IN AN AIRCRAFT HOLD

PRODUCT INFORMATION SHEET

SAFETY DATA SHEET

Revision 2 – 7 Jan 2025

The products referred to in this document can be defined as 'articles' under regulation (EC) No 1907/2006 (REACH). In light of this, the requirements for a Safety Data Sheet, as set out under article 31 and Annex II of REACH, is not applicable to these products. Accordingly, this Product Information Sheet is provided in the form of a Safety Data Sheet only as a service to our customer and is not based upon any particular requirement of REACH.

1. Product and manufacturer Identification

Alpinestars Commercial Reference: 6504925 - Tech-Air® 5 Plasma System
(hereinafter may also be referred to as the System)

Alpinestars Certification Reference: ABS5P25

The System is an airbag system intended to be worn with a compatible outer garment. The System is a device intended to increase the level of protection offered to a motorcyclist in the event of an accident. An on-board Electronic Control Unit, powered by a lithium battery, monitors the rider movements to inflate the airbag if a dangerous situation is detected. The inflatable subassembly is not for any other use.

Manufacturer Information: Alpinestars SpA
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2. Hazard Identification

In case of function, the System will:

	Effect	Hazard
a.	Rapidly inflate and attempt to achieve a predefined shape	Possible mechanical injury if not worn correctly
b.	Create a bang at the instant of inflation	Possible hearing discomfort
c.	Slowly vent the filling gas	Possible irritant if inhaled in high concentrations

Note that the activation of the System will only occur if commanded by the Electronic Control Unit, or if the conditions in section 5 are met.
In general, under normal conditions of use, lithium batteries are a safe power source for electronic devices. In case of the System, the battery is sealed in the upper back protector part.

A potential hazard may arise should the System's battery be unsealed, dismantled or tampered or punctured in which case the battery may spontaneously release a flammable gas mixture, which could cause burns and/or discharges.
The battery's content must not be exposed to water as if the negative electrode gets in contact with water, hydrogen gas is formed, which may be hazardous.

The battery must not be exposed to temperatures under -20°C and above +60°C, or be incinerated.
For proper battery charging, the temperature must be between 0°C and + 45°C.

3. Composition and information of the System

The System is composed by an Electronic Control Unit, a lithium battery of 9.36 Wh and an inflatable subassembly that consists of an airbag chamber plus one Gas Inflator.

Airbag Chamber: Manufactured of a common coated fabric

Lithium Battery: Ingredients:

Chemical name	Percent of content	CAS no.
Lithium nickel cobalt manganese oxide ($Li(NiCoMn)O_2$)	25%~35%	182442-95-1
Graphite (C)	15%~20%	7782-42-5
Polyvinylidene fluoride (PVDF)	1%~5%	24937-79-9
Carbon Black	0.5%~3%	1333-86-4
Aluminum (Al)	21%~23%	7429-90-5
Copper (Cu)	10%~11%	7440-50-8
Lithium hexafluorophosphate ($LiPF_6$)	10%~15%	21324-40-3

Airbag Gas Inflator: One closed and hermetic vessel. It contains ~30 g of a compressed mixture of non-flammable gas of Division 2.2 (94% Argon and 6% helium) and an initiator containing a mixture of 0.3 g of active substances. The housing of the inflator is metallic, inert and electrically conductive.

4. First Aid Measures

In case of battery rupture provide maximum ventilation to clear out corrosive fumes/gases and pungent odor.
Eye contact: Flush with plenty of water (eyelids-held open) for at least 15 minutes. Get medical attention.
Skin contact: Treat for second degree burn, cool burn area. Remove all contaminated clothing and flush affected areas with plenty of water and soap. Do not apply greases or ointments.

Seek for medical assistance.

5. Fire Fighting measures

Suitable Extinguishing media and procedures: apply copious amounts of water until the fire is extinguished and the device has cooled to a temperature lower than 130°C.

When the temperature exceeds 130°C the Gas Inflator will start to release the gas stored inside. When the temperature exceeds 300°C the igniter will self-combust.

6. Accidental Release Measures

The material contained within the batteries would only be expelled under abusive conditions. On such occurrence, cover battery or spilled substances with dry sand or vermiculite, place in approved container (after cooling if necessary) and dispose in accordance with local regulations.
In case of battery rupture, use gloves, respiratory protection, safety goggles and respiratory equipment.

When the Gas Inflator is handled and installed properly, no spills or leaks should occur. If it is ruptured and gas generant is present, clean up with nonsparking tools. Avoid spark, static electricity, and open flame. Avoid raising dust. Ventilate area. Wash spill site with water after material pick-up is complete.
The combustion gases are non-toxic, and compliance with ACGIH exposure limits has been demonstrated

7. Handling and Storage

Handling:
When System not worn, packaged in a box or unpackaged: no special handling is required for end users.
The Electronic Control Unit must be switched off during handling. In this state no special System handling is required for end users.
Never handle the Gas Inflators, unless differently indicated by Alpinestars and local laws and regulations.
Gas Inflators must be handled with care and only by people provided with the proper indications and training for the task.
Never try to mount damaged inflators or battery or try to repair them. Never machine, drill, weld, solder or heat inflators and batteries.

Local laws and regulations could provide special handling indications for dealers.

The System can be verified to be in the off state if there are no illuminated LEDs on the System.

Storage:
Where possible store inside the original packaging. Where the original packaging is no longer available, the System is best stored suspended vertically on a hanger.
Storage temperature range:
- Less than 1 year: between 0°C and +25°C
- Less than 3 months: between -5°C and +35°C
- Do not expose to temperatures above 60°C

Storage relative humidity range: 60±25%.

Never store inflators in areas with strong electromagnetic fields. Fire extinguishers must always be available in the storage area. Take measures against electrostatic charge (adequate discharge capacity, e.g. concrete floors, grounding of the storage facility).

8. Exposure Controls and Personal Protection

Exposure Controls:
N/A

Individual Protection:
No particular PPE is required. Local laws and regulations could provide mandatory use of PPE for dealers' employees.

9. Physical and Chemical Properties

Appearance:
The System is predominantly black and red in color. The back of the System has a back protector. The Electronic Control Unit is installed in the casing in the upper back part.

10. Stability and Reactivity

If correctly handled and stored, the System is inherently stable. Conditions to avoid are:

- Exposure to excessive heat or flame (See section 5)
- Crushing or puncturing of the System

11. Toxicological Information

In normal conditions, there is no risk during handling and use.

12. Ecological Information

When properly used and disposed, the System does not present environmental hazard.

13. Disposal Information

If the Gas Inflator is still full, the System may not be disposed. In this case, or in case of System with damaged Gas Inflator, the System should be sent back to Alpinestars in approved packaging in accordance with the certificate of transportation (see chapter 14 hereunder), and correctly labelled.

If it is checked that the Gas Inflator is fired, the System may be disposed of in accordance with national waste regulations for fabrics, metals and electronic parts.

It is suggested that the System is returned to Alpinestars for disposal at the end of its life.

14. Transportation Information

According to international rules for transport, the following classification applies to the Tech-Air® 5 Plasma System:

Identification number	UN2990
Hazard Classification	Class 9
Proper shipping name	Life-saving Appliance – Self Inflating

For shipping with a professional carrier, see further instructions on Annex A.

The System can be carried in passenger aircraft as a carry-on and/or checked baggage, subject to airline company approval. Therefore, admission of the System onboard must be checked beforehand with the travel operator for each specific flight. Information on Annex B may be useful in this case.
During transport, the System must be switched off.

The System contains one lithium battery pack < 20Wh (packed with the equipment, in compliance with UN3481 PI 967, Section II) which must be disconnected before transport.

15. Regulatory Information

Tech-Air® 5 Plasma System is CE certified as personal protective equipment under Regulation (EU) 2016/425.
The Gas Inflator is CE certified under directive 2007/23/EC, registration number 0589.P1.000406.

16. Additional Information

The information contained in this Safety Data Sheet relates only to the Tech-Air® 5 Plasma System. The information is correct to the best of Alpinestars' knowledge at the date of publication. This information is provided only for guidance on the System's safe handling, storing, use, processing, storage, transportation and disposal and is not to be considered as a warranty or quality specification.

ANNEX A

Packaging Instruction for transportation with Professional carrier:

	By Air	By Sea/Road
Hazard and handling Labelling		
Marking	UN2990 – Life Saving Appliances, Self Inflating Name and address of the shipper Name and address of the consignee Net weight of the package	UN2990 – Life Saving Appliances, Self Inflating
Remarks	Contact Carrier in advance to check for further requirements. Some carriers may require the following label: 	

Example of labeling and marking:

ANNEX B

Instruction for transportation on passenger aircrafts.
Life-saving appliances - Self-inflating can be transported on passenger aircraft subject to IATA Provisions (see table below). Check-In baggage is preferred. Contact beforehand the travel operator to get the approval for transportation.
In case of needs, the table below may be cited.

Table 2.3.A. Provisions for Dangerous Goods Carried by Passengers or Crew (Subsection 2.3) 64th Edition (2023) Page 1/2

	The approval of the operator(s) is required	Permitted in or as checked baggage	Permitted in or as carry-on baggage	The pilot-in-command must be informed of the location
Alcoholic beverages, when in retail packagings, containing more than 24% but not more than 70% alcohol by volume, in receptacles not exceeding 5 L, with a total net quantity per person of 5 L. ***Note**: Alcoholic bevarages containing 24% or less alcohol by volume are not subject to any restrictions.*	NO	YES	YES	NO
Ammunition, securely packaged (in Div. 1.4S, UN 0012 or UN 0014 only), in quantities not exceeding 5 kg gross weight per person for that person's own use. Allowances for more than one person must not be combined into one or more packages.	YES	YES	NO	NO
Avalanche rescue backpack, one (1) per person, containing a cartridge of compressed gas in Div. 2.2. May also be equipped with a pyrotechnic trigger mechanism containing no more than 200 mg net of Div. 1.4S. The backpack must be packed in such a manner that it cannot be accidentally activated. The airbags within the backpacks must be fitted with pressure relief valves.	YES	YES	YES	NO
Baggage with installed lithium batteries non-removable batteries exceeding - 0.3g lithium metal or 2.7 Wh.	FORBIDDEN			
Baggage with installed lithium batteries: - non-removable batteries. Batteries must contain no more than 0.3 g lithium metal or for lithium ion must not exceed 2.7 Wh; - removable batteries. Batteries must be removed if baggage is to be checked in. Removed batteries must be carried in the cabin.	NO	YES	YES	NO
Batteries, spare/loose, including lithium batteries, non-spillable batteries, nickel-metal hydride batteries and dry batteries (see 2.3.5.8) for portable electronic devices must be carried in carry-on baggage only. Articles which have the primary purpose as a power source, e.g. power banks are considered as spare batteries. These batteries must be individually protected to prevent short circuits. Lithium metal batteries: the lithium metal content must not exceed 2 g (see 2.3.5.8.4). Lithium ion batteries: the Watt-hour rating must not exceed 100 Wh (see 2.3.5.8.4). Each person is limited to a maximum of 20 spare batteries.* (*The operator may approve the carriage of more than 20 batteries). Non-spillable batteries: must be 12 V or less and 100 Wh or less. Each person is limited to a maximum of 2 spare batteries (see 2.3.5.8.5).	NO* *The operator may approve the carriage of more than 20 batteries.	NO	YES	NO
Camping stoves and fuel containers that have contained a flammable liquid fuel, with empty fuel tank and/or fuel container (see reference 2.3.2.5 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	YES	YES	NO	NO
Chemical Agent Monitoring Equipment, when carried by staff members of the Organization for the Prohibition of Chemical Weapons on official travel (see reference 2.3.4.4 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	YES	YES	YES	NO
Disabling devices such as mace, pepper spray, etc containing an irritant or incapacitating substance are forbidden on the person, in checked and carry-on baggage.	FORBIDDEN			
Dry ice (Carbon dioxide, solid), in quantities not exceeding 2.5 kg per person when used to pack perishables not subject to these Regulations in checked or carry-on baggage, provided the baggage (package) permits the release of carbon dioxide gas. Checked baggage must be marked "dry ice" or "carbon dioxide, solid" and with the net weight of dry ice or an indication that there is 2.5 kg or less dry ice.	YES	YES	YES	NO
e-cigarettes (including e-cigars, e-pipes, other personal vaporizers) containing batteries must be individually protected to prevent accidental activation.	NO	NO	YES	NO
Electro shock weapons (e.g. Tasers) containing dangerous goods such as explosives, compressed gases, lithium batteries, etc. are forbidden in carry-on baggage or checked baggage or on the person.	FORBIDDEN			
Fuel cells, containing fuel, powering portable electronic devices (e.g. cameras, cellular phones, laptop computers and camcorders). Refer to reference 2.3.5.10 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	NO	NO	YES	NO
Fuel cell cartridges, spare for portable electronic devices. Refer to reference 2.3.5.10 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	NO	YES	YES	NO
Gas cartridges, small, non-flammable containing carbon dioxide or other suitable gas in Division 2.2. Up to two (2) small cartridges fitted into a **self-inflating safety device** intended to be worn by a person, such as a life jacket or vest. Not more than two (2) devices per passenger and up to two (2) spare small cartridges per device, not more than four (4) cartridges up to 50 mL water capacity for other devices (see reference 2.3.4.2 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	YES	YES	YES	NO
Gas cylinders, non-flammable, non-toxic worn for the **operation of mechanical limbs.** Also, spare cylinders of a similar size if required to ensure an adequate supply for the duration of the journey.	NO	YES	YES	NO
Hair styling equipment containing a hydrocarbon gas cartridge, up to one (1) per passenger or crew-member, provided that the safety cover is securely fitted over the heating element. This hair styling equipment must not be used on board the aircraft. Spare gas cartridges for such hair styling equipment are not permitted in checked or carry-on baggage.	NO	YES	YES	NO
Heat producing articles such as underwater torches (diving lamps) and soldering irons. (Refer to 2.3.4.6 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	YES	YES	YES	NO
Insulated packagings containing refrigerated liquid nitrogen (dry shipper), fully absorbed in a porous material containing only non-dangerous goods.	NO	YES	YES	NO
Internal combustion or fuel cell engines, must meet A70 (see 2.3.5.15 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	NO	YES	NO	NO
All references above refer to the current IATA Dangerous Goods Manual. also **It is important to always refer to the specific Airline/Operator Dangerous Goods Manual for any other variations.** **The provisions of 2.3 and Table 2.3.A may be limited by State or operator variations. Passsengers should check with their airline for the current provisions.**				

Gas cartridges, small, non-flammable containing carbon dioxide or other suitable gas in Division 2.2. Up to two (2) small cartridges fitted into a **self-inflating safety device** intended to be worn by a person, such as a life jacket or vest. Not more than two (2) devices per passenger and up to two (2) spare small cartridges per device, not more than four (4) cartridges up to 50 mL water capacity for other devices (see reference 2.3.4.2 in the current copy of the IATA Dangerous Goods Regulations for expanded details. The Airline/Operators Dangerous Good Manual should also be viewed for any variations.)	YES	YES	YES	NO