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

PRODUCT INFORMATION SHEET

SAFETY DATA SHEET

Revision 5 – 11 Sep 2023

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: 650 8120 – Tech Air® 5 System
036 4023 – Airbag Vest Avertum Tech Air®
(hereinafter may also be referred to as the System)

Alpinestars Certification Reference: ABS520

The System is an airbag system which is subsequently installed into a compatible outer garment. The System is a device, which is 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 acceleration to inflate the air bag 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 form 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 function 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 the case of the System, the battery is sealed in a casing 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.

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 containing a lithium battery 9.36 Wh, and an inflatable subassembly that consists of an airbag chamber plus two Gas Inflators.

Airbag Chamber: Manufactured of polyester yarn, silicone coated
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 Inflators: Two steel vessels containing each one an igniter and 15-30g of a compressed gas mixture (94% Argon, CAS 7440-37-1 and 6% helium, CAS 7440-59-7)
Each Igniter contains 0.31 g of Zirconium Potassium Perchlorate

4. First Aid Measures
In case of battery rupture provide maximum ventilation to clear out corrosive fumes/gases and pungent odor.

Inhalation: If the battery is leaking, remove to fresh air. If irritation persists, consult a physician.
Skin contact: Remove all contaminated clothing and flush affected areas with plenty of water and soap. Do not apply greases or ointments.
Eye contact: Immediately flush with plenty of water for at least 15 minutes. Get medical attention at once.

Seek for medical assistance.

5. Fire Fighting measures
Suitable Extinguishing media: CO_2, Dry chemical or Foam extinguishers.
In case only water is available, use large amounts of water.

Conditions which cause ignition:
When the temperature exceeds 130°C the Gas Inflators will release the stored gas.
When the temperature exceeds 300°C the igniters 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; then 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 respiratory equipment.

7. Handling and Storage
Storage:
Where possible store inside 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%.

Handling:
When not worn, packaged in a box or unpackaged.
No special handling is required for end users. Local laws and regulations could provide special handling for dealers.

The Electronic Control Unit must be switched off. In this state no special handling is required. The System can be verified in the off state if there are no illuminated LEDs on the System.

8. Exposure Controls and Personal Protection
Exposure Controls
N/A

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

9. Physical and Chemical Properties
Appearance:
The System is predominantly gray or black. The back of the System has a cell-shaped back protector. The Electronic Control Unit is installed in the casing in the upper back protector part.

10. Stability and Reactivity
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

The System may not be disposed if at least one Gas Inflator is still full. For the disposal both Gas Inflators must be fired. Once this has been done 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 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 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.

The System contains 1 lithium battery back < 20Wh, packed with the equipment, in compliance with UN3481 PI 967, Section II.

15. Regulatory Information

The System ABS520 has been CE certified under EU directive 2013/29/EU, registration number 0080.P1.15.0023
The airbag inflators have been 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 System and Airbag Vest Avertum Tech Air®. 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.
Self-inflating life-saving appliances can be transported on passenger aircraft subject to IATA Provisions respect (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)

2

2.3

Dangerous goods must not be carried in or as passengers or crew, checked or carry-on baggage, except as otherwise provided below. Dangerous goods permitted in carry-on baggage are also permitted "on one's person", except where otherwise specified.

	The pilot-in-command must be informed of the location	Permitted in or as carry-on baggage	Permitted in or as checked baggage	The approval of the operator is required
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.	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 cartridges 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–0.3 g lithium metal or 2.7 Wh.	FORBIDDEN			
Baggage with installed lithium batteries:	NO	YES	YES	NO
– 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.				
Batteries, spare/loose, including lithium metal or lithium ion cells or batteries, for portable electronic devices must be carried in carry-on baggage only. For lithium metal batteries the lithium metal content must not exceed 2 g and for lithium ion batteries the Watt-hour rating must not exceed 100 Wh. 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. Each person is limited to a maximum of 20 spare batteries. *The operator may approve the carriage of more than 20 batteries.	NO*	NO	YES	NO
Camping stoves and fuel containers that have contained a flammable liquid fuel, with empty fuel tank and/or fuel container (see 2.3.2.5 for details).	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 2.3.4.4).	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), see 2.3.5.9 for details.	NO	NO	YES	NO
Fuel cell cartridges, spare for portable electronic devices, see 2.3.5.9 for details.	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** such as a life jacket or vest. Not more than one (1) device per passenger and up to two (2) spare small cartridges per person, not more than four (4) cartridges up to 50 mL water capacity for other devices (see 2.3.4.2).	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 curlers containing hydrocarbon gas, up to one (1) per passenger or crew-member, provided that the safety cover is securely fitted over the heating element. These hair curlers must not be used on board the aircraft at any time. Gas refills for such curlers 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 (See 2.3.4.6 for details).	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 2.3.5.13 for details).	NO	YES	NO	NO
Lithium Batteries: Security-type equipment containing lithium batteries (see 2.3.2.6 for details).	YES	YES	NO	NO

Fuel cell cartridges, spare for portable electronic devices, see 2.3.5.9 for details.	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** such as a life jacket or vest. Not more than one (1) device per passenger and up to two (2) spare small cartridges per person, not more than four (4) cartridges up to 50 mL water capacity for other devices (see 2.3.4.2).	YES	YES	YES	NO