1. Product and company identification

1.1 Description of the product:
Pyrotechnic automotive safety devices, including Air Bag inflators, Air Bag Modules, Seat-belt pretensioners and retractors with pretensioners

1.2 Use of the product:
Safety devices for vehicles

1.3 Description of the company:
TK Holdings Inc, 2500 Takata Drive, Auburn Hills, Michigan, Michigan, USA, (843) 537-8284

1.4 Emergency number:
Chemtrec Emergency Numbers (24 hour):
USA: (800) 424-9300 (Emergencies Only)
International: (+1) (703) 527-3887 (Emergencies Only)

Note: Safety Devices for Vehicles are considered manufactured articles by TK Holdings Inc. and other manufacturers.

2. Hazards identification

Classification: Referenced safety devices are classified as either Class 9, or 1.4 according to the UN and USDOT criteria. (Note: While pyrotechnic ingredients contained in the device represent an explosion hazard, the ingredients can only be released by destructive disassembly of the device). The safety devices do not present an explosion hazard when fully assembled.

Hazards:
• Impact hazard of an uncontrolled activation of the safety device due to: fire; heat; electrostatic discharge: inductions though electromagnetic radiation; or, excessive mechanical load.
• Potential for frostbite injuries due to sudden release of pressure from compressed gas air bag inflators.
• Burn hazard when there is direct contact with safety device during activations
• Potential eye and respiratory tract exposure and irritation from safety device combustion products (particles and gases). Combustion product exposure hazards may increase if large numbers of devices are involved such as responding to transport vehicle fires involving factory shipment quantities of devices
• Temporary impact to hearing from high level noise impulse during device activation.

3. Composition / Information on ingredients

The pyrotechnic ingredients are hermetically sealed inside of the safety devices. The pyrotechnic ingredients in the objects will not be release under normal conditions or use, or during standard disposal methods. To avoid inadvertent exposure to combustion by-products, safety device housings should only be opened during the disposal if a necessary step of the process.

4. First-aid measures

In case of medical emergency, follow general first-aid rules, including:
• If combustion products are inhaled:
  - Supply fresh air.
  - Seek medical attention if there is an adverse reaction.

• If combustion products come into contact with skin:
  - Rinse affected area with copious amounts of water
  - Seek medical attentions if burns develop.

• If combustion products come into contact with eyes:
  - Rinse eyes thoroughly with copious amounts of water.
  - Seek medical attention immediately.

• Frostbite due to exposure to compressed gases:
  - Get medical assistance as quickly as possible.
  - Keep the affected body part elevated in order to reduce swelling.
  - Remove all wet and restrictive clothing and jewellery that may affect blood flow.
  - Apply sterile, dry bandages between any affected areas such as fingers.

5. Fire-fighting measures

• Approach Method: Fight fires from a safe distance. Depending on design and condition, safety devices may become dangerous projectiles.

• Suitable extinguishing agents: Water spray, or Type ABC fire extinguishers depending on nature of fire.

• Extinguishing agents not suitable for safety reasons: none known.

• Special hazards from the combustion products: see section 2-“Hazard Identification”.

• Special protective equipment/clothing for extinguishing fires: Standard fire-fighting protective clothing.

6. Accidental release measures

Precautionary safety measures:
In the case of damage of the safety device’s housing, resulting in the release of the pyrotechnic materials, keep all ignition sources such as heat, impact, sparks and electrostatic discharge away.

In event that a large quantity of safety devices become involved in an accident at one time, such as during transport of safety device in the manufacturer’s shipping containers, large quantities of compressed gases may escape abruptly, and present a chemical exposure hazard, or act as an asphyxiant. See Section 8.0 for further details. In the case of an integrated compressed gas container, compressed gases may escape abruptly, and can, in large quantities, act as an asphyxiant.

Precautionary Environmental measures:
Contain any spills of safety devices. Prevent devices from entering natural bodies of water. (e.g. Lakes, Rivers, and streams).

Process for Clean-Up:
Where safety devices have become damaged, pyrotechnic material may be released. If so, then pick up pyrotechnic material while wearing nitrile gloves, and place in a container with wafer. Clean-up any spilled material using equipment that will not generate static, such as a horse hair brush, for clean-up operation. Dispose collected material in accordance with governmental regulations.
7. Handling and storage

General requirements:
The handling and use of safety devices should only be performed by trained individuals. Follow-activation of a safety device, it must be verified that all stages of multi-stage devices have been deactivated and depressurized.

7.1 Handling:
- Do not connect to an inappropriate electrical power source. Only approved connections to the onboard electronics in the vehicle or suitable testing devices with a measured current of a max. of 0.01 A are permitted.
- After sustaining a mechanical impact, safety devices must be inspected for damage, and managed for disposal if the device’s housing is damaged.
- Do not attempt to modify, repair or open devices.
- Do not remove electrical shunt clips or jumper wires installed on, or within electrical connectors.
- The manufacturer’s state of construction on delivery may not be changed or modified.
- Do not remove existing jumpers.
- Keep away from ignition sources and protect against heat and sparks.
- Take measures to prevent electrostatic charging of devices, or static discharges to devices.
- Avoid use of sources of electromagnetic radiation (e.g. radiotelephones, walkie-talkies, or mobile telephones) in the proximity (approx. 2 m) of damaged devices.
- Safeguard against theft and unauthorised use of safety devices.
- When handling air bag modules, keeps the module facing upward and away from personnel module with the air bag facing upward and away from personnel.
- Protect hands and keep object’s mechanically movable parts away from body.
- Where applicable, observe manufacturer’s installation and dismantling instructions.

7.2 Storage:
- Observe regulations specific to each country for storage.
- Store in a dry location in the original packaging.
- Protect from sources of heat, electrical sparks or open flames, mechanical impacts, and electrostatic charging.
- Do not store together with oxidizing agents, flammable or other materials or objects that might increase hazards if inadvertent deployment of the device occurs.
- Safeguard against theft of safety devices.

7.3 Specific applications:
Safety devices shall only be used for their designated purpose as automobile safety components.

8. Exposure controls /personal protection

8.1 Exposure threshold limit values for devices:
- none
8.2 Exposure threshold limits for combustion products:

<table>
<thead>
<tr>
<th>Description</th>
<th>CAS-No</th>
<th>OSHA PEL</th>
<th>ACGIH TLV</th>
<th>OTHER LIMITS RECOMMENDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide</td>
<td>124-38-9</td>
<td>5000ppm</td>
<td>5000ppm</td>
<td>-</td>
</tr>
<tr>
<td>Carbon Monoxide</td>
<td>630-08-0</td>
<td>50ppm</td>
<td>25ppm</td>
<td>-</td>
</tr>
<tr>
<td>Nitrogen Dioxide</td>
<td>10102-44-0</td>
<td>5ppm</td>
<td>3ppm</td>
<td>-</td>
</tr>
</tbody>
</table>

Comments:
ACGIH Particulates (Not Otherwise Classified)
Inhalable fraction 10 mg/m³
Respirable fraction 3 mg/m³

8.3 Threshold limits and monitoring of the exposure

8.3.1 Threshold limits and monitoring of the exposure at the workplace

When handling non-activated devices:

<table>
<thead>
<tr>
<th>Respiratory protection:</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing Protection:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Hand Guards:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Eye Protection:</td>
<td>Safety Glasses</td>
</tr>
<tr>
<td>Body Protection:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Protective and hygiene measures:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Threshold limits/monitoring of the environmental exposition:</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

When the device is activated (e.g. Testing Purposes):

<table>
<thead>
<tr>
<th>Respiratory protection:</th>
<th>Appropriate respiratory protection must be worn if the workplace threshold values are exceeded.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hearing Protection:</td>
<td>When activating devices, wear hearing protection.</td>
</tr>
<tr>
<td>Hand Guards:</td>
<td>No contact with activated, hot objects. Protective gloves made of cotton or leather when handling following activation and cooling off.</td>
</tr>
<tr>
<td>Eye Protection:</td>
<td>Safety Glasses</td>
</tr>
<tr>
<td>Body Protection:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Protective and hygiene measures:</td>
<td>Do not inhale combustion gas and residue. Avoid contacting skin with residue. If it occurs, wash off with water.</td>
</tr>
<tr>
<td>Threshold limits/monitoring of the environmental exposition:</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>

n.a.: not applicable
9. Physical and chemical properties

9.1 General information:

- Appearance: solid object with no specific colour.
- Odor: none

9.2 Important information on health and environmental protection as well as safety:

- Activation of the object beginning at 130 °C and through electrical current beginning at 0.15 A.
- Other parameters: n.a.

9.3 Miscellaneous:

- Not applicable.

10. Stability and Reactivity

- No hazardous reactions are expected if handled and stored properly.

10.1 Conditions to be avoided:

- See also Section 7 “Handling and storage”.

10.2 Materials to be avoided:

- Avoid contact with corrosive media such as acids, bases, oils or solvents.

10.3 Hazardous decomposition products:

- When safety devices are activated, carbon dioxide, carbon monoxide, nitric oxide and particulate may result.

11. Toxicological information

- When used correctly, no toxicological hazards are anticipated.

12. Ecological information

When used correctly, no environmental damage is expected. The pyrotechnical ingredients contained in the device are hermetically sealed and cannot be released under normal conditions of use.

The pyrotechnical objects for vehicles can contain perchlorate as ingredients. Special handling requirements may apply when in the state of California due to Perchlorate Material sealed within the safety device. Refer to the following link for State specific precautions:

www.dtsc.ca.gov/hazardouswaste/perchlorate

n.a.: not applicable
13. Disposal consideration

Safety Devices which have not been activated or only partially activated must only be disposed of by companies properly licensed to complete such work in accordance with local regulations. Un-activated or partially activated device may be considered hazardous waste for the purposes of disposal or recycling. Contact your State or Federal Environmental Regulatory agency to determine the handling requirement within your area. Any safety devices damaged by fire, heat or an accident should be managed as non-activated objects.

14. Transportation information

According to DOT (road/rail), IMDG (sea) and ICAO/IATA (air freight):

Classification is dependent on the type of object, the packaging and, if applicable, the existing assignment by the responsible authority.

Airbag modules/Airbag inflators/Seat-belt pretensioners:

- UN 3268, Air Bag Modules / Air Bag Inflators /Seat-belt pretensioners, Class 9, PG III
- UN 0432, Articles, Pyrotechnic, Class 1.4S, PG II
- UN 0431, Articles, Pyrotechnic, Class 1.4G, PG II
- UN 0439, Articles, Explosive, Class 1.4S, PG II
- UN 0353, Articles, Explosive, Class 1.4G, PG II

Other relevant information:

Safety Devices may only be transported within or through the United States with an approval from the Department of Transportation.

15. Regulatory information

TSCA Status: In compliance with 49 CFR Part 710, all components of this product are listed on the US-TSCA Chemical Inventory or otherwise exempt from the inventory reporting rules.

CERCLA Reportable Quantity, 40 CFR 302: .......................... No

EPCRA Section 302, Extremely Hazardous Substances: ............. No

EPCRA Section 311/312, Hazard Category: .............................. No

EPCRA Section 313, Toxic Chemicals: ...................................... No

RCRA Information:

To the best of our knowledge, there are no RCRA regulations that apply to this article. However, all federal, provincial, state, and local regulations should be reviewed prior to disposal.

EU Classifications ......................................................... Xn

n.a.: not applicable
EU Risk Phrases

- R2: Risk of explosion by shock, friction, fire or other sources of ignition
- R5: Heating may cause an explosion

EU Safety Phrases

- S2: Keep out of the reach of children
- S15: Keep away from heat
- S33: Take precautionary measures against static discharges
- S43: In case of fire use Water sprays or Type ABC fire extinguishers depending on nature of fire from a safe distance.
- S47: Keep at temperature not exceeding ambient (less than 140°F [60°C])
- S59: Refer to manufacturer/supplier for information on recovery/recycling

16. Other information


The information contained herein only describes the safety requirements of the product and is based on the present state of our knowledge. It does not represent a legal guarantee of the properties of the product described. The recipients of our product have sole responsibility for complying with existing laws and regulations.

The safety and product information contained in this safety data sheet must be made available to the users, employees and all other persons who handle this product before using the product. In order to eliminate hazards, the information for the safe handling and storage must be followed. The manufacturer assumes no responsibility for any bodily injury or property damage, or similar, which results from the improper use or non-compliance with guidelines of the safety data sheet.