

Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

Material safety data sheet according to Regulation 1907/2006

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier:

Igniters, Registration No.: Not applicable – article

1.2 Relevant identified uses of the substance or mixture:

Igniters for Airbag Gas generators, belt pretensioners, pyrotechnical battery clip's and other safety systems in automotive applications.

1.3 Details of the supplier of the safety data sheet:

EMS-PATVAG s.r.o. Brankovice 350, 683 33 Brankovice

Tel.: +420 517 302 200, Fax: +420 517 302 222; www.emspatvag.cz, welcome@emspatvag.cz or national toxicology center in the country of use.

1.4 Emergency telephone number:

Toxicology information centre, 120 00 Praha 2, Na Bojišti 1, tel.:224 919 293, 224 915 402 tis@vfn.cz

Types:	Code:	Part-No:	Designation:	Charge:
	19	104332	AAZ140B131R202	YIM005+YIP613/TPP613
	21	104333	AAZ140C130R202	YIM005+YIP613/TPP613
	29	104205	AAZ101A626R201	ZPP006/YIM006/+BKNO ₃
	31	103017	AAZ120A626R201	ZPP006/YIM006/+BKNO ₃
	31 lab.	103277	AAZ100A626R201	ZPP006/YIM006/+BKNO ₃
	33	104744	AAZ120A634R201	ZPP006/YIM006+YIP613/TPP613
	37	104540	AAZ141A632R201	ZPP006/YIM006/+BKNO ₃
	39	104980	AAZ120A628R201	ZPP006/YIM006/+BKNO ₃
	41	105629	AAZ101A643R201	ZPP006/YIM006+YIP613/TPP613
	43	105758	AAZ101A628R201	ZPP006/YIM006/+BKNO ₃
	45	106662	AAZ120A645R201	ZPP006/YIM006/+BKNO ₃
	47	106743	AAZ120A643R201	ZPP006/YIM006+YIP613/TPP613
	49	106844	AAZ120B628R201	ZPP006/YIM006/+BKNO ₃
	51	106885	AAZ100B626R201	ZPP006/YIM006/+BKNO ₃
	53	106884	AAZ120B634R201	ZPP006/YIM006+YIP613/TPP613
	55	107076	AAZ120B643R201	ZPP006/YIM006+YIP613/TPP613
	57	107090	AAZ100B643R201	ZPP006/YIM006+YIP613/TPP613
	59	107464	AAZ130B643R201	ZPP006/YIM006+YIP613/TPP613
	61	107814	AAZ120A643R204	ZPP006/YIM006+YIP613/TPP613
	63	107973	AAZ120A651R204	ZPP006YIM006+YIM005
	65	108506	AAZ121A643R204	ZPP006/YIM006+YIP613/TPP613
	67	108423	AAZ124A643R204	ZPP006/YIM006+YIP613/TPP613
	69	108435	AAZ125A625R204	ZPP006YIM006+YIP661/ZPP661
	71	108600	AAZ124B634R201	ZPP006/YIM006+YIP613/TPP613
	73	108652	AAZ124A634R204	ZPP006/YIM006+YIP613/TPP613
	75	108745	AAZ127A625R204	ZPP006YIM006+YIP661/ZPP661
	77	108883	AAZ120A634R204	ZPP006/YIM006+YIP613/TPP613
	79	108882	AAZ120A625R204	ZPP006/YIM006+YIP661/ZPP661
	81	108890	AAZ132A634R204	ZPP006/YIM006+YIP613/TPP613
	83	108888	AAZ132A625R204	ZPP006YIM006+YIP661/ZPP661
	85	108659	AAZ100A634R204	ZPP006/YIM006+YIP613/TPP613
	87	108453	AAZ100A625R204	ZPP006YIM006+YIP661/ZPP661
	89	108909	AAZ100A634R204	ZPP006/YIM006+YIP613/TPP613
	91	108747	AAZ100A625R204	ZPP006YIM006+YIP661/ZPP661
	93	108961	AAZ128A563R204	ZPP006YIM006+YIP661/ZPP661
	95	108960	AAZ100A563R204	ZPP006YIM006+YIP661/ZPP661
	97	108958	AAZ134A625R204	ZPP006YIM006+YIP661/ZPP661
	E7	109559	AAZ100A626R204	ZPP006/YIM006+ BKNO ₃
	F3	109807	AAZ135A574R204	ZPP006YIM006+YIP661/ZPP661
	F3 lab.	109815	AAZ100A574R204	ZPP006YIM006+YIP661/ZPP661
	F5	109830	AAZ121A563R204	ZPP006YIM006+YIP661/ZPP661
	F7	109848	AAZ120A676R204	ZPP006/YIM006
	G1	110073	AAZ135A573R204	ZPP006YIM006+YIP661/ZPP661

Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

	G3	110037	AAZ136A574R204	ZPP006/YIM006+YIP661/ZPP661
	G5	110033	AAZ100A677R204	ZPP006/YIM006+YIP613/TPP613
	G7	110205	AAZ100A678R204	ZPP006/YIM006
	G9	110238	AAZ120A677R204	ZPP006/YIM006+YIP613/TPP613
	H1	110286	AAZ130A680R204	ZPP006/YIM006+ BKNO ₃
	H5	110032	AAZ100B643R204	ZPP006/YIM006+YIP613/TPP613
	H7	110283	AAZ130A676R204	YIM006/ZPP006
	H9	110560	AAZ100A676R049	YIM006/ZPP006
	J1	110541	AAZ137A676R204	YIM006/ZPP006

2. Hazard identification

2.1 Classification of the substance or mixture: Expl. 1.3,
Acute Tox. 4,
Eye Dam. 1

2.2 Label elements:



H-Phrases:

H203 Explosive; fire, blast or projection hazard
H302 Harmful if swallowed
H318 Causes serious eye damage

P- Phrases:

P102 Keep out of reach of children
P210 Keep away from heat/sparks/open flames/hot surfaces – No smoking
P250 Do not subject to grinding/shock/.../friction
P273 Avoid release to the environment
P280 Wear protective gloves/protective clothing/eye protection/face protection
P240 Ground/bond container and receiving equipment
P370+P380 In case of fire: Evacuate area
P373 DO NOT fight fire when fire reaches explosives

Signal word: Danger

2.3 Other hazards:

Entire igniters are not harmful (see chap. 7). Classification according to EU Regulation 1272/2008 (CLP) and additional information from trade literature and company publishing.
























Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

3. Composition/Information or ingredients

The propellant of the Igniters is hermetically closed from the environment. The housing parts are welded together or conjoined and can only be opened by destroying the units. For information the pyrotechnics used are as follows:

Charge	Component 1			Component 2		
	CAS / REACH	Content / Classif.	H- Phrases	CAS:	Content / Classif.	H- Phrases
BKNO ₃	7440-42-8	Boron (30-45 %)		7757-79-1	Potassium nitrate (55-70 %) Oxid. Solid 3	 H272
YIM005	7778-74-7 REACH Registration number: 01-2120764842-47-0006	Potass. perchlorate (35-45 %) Oxid. Solid 1 Acute Tox. 4	  H271, H302	573-83-1	Potassium picrate (55-65 %)	 
YIM006	7778-74-7 REACH Registration number: 01-2120764842-47-0006	Potass. perchlorate (35-45%) Oxid. Solid 1 Acute Tox. 4	  H271, H302	7440-67-7	Zirconium (55-65 %) Pyr. Solid 1 Water React. Flam. Gas 1	 H250, H260
ZPP006	7778-74-7 REACH Registration number: 01-2120764842-47-0006	Potass. perchlorate (35-45%) Oxid. Solid 1 Acute Tox. 4	  H271, H302	7440-67-7	Zirconium (55-65 %) Pyr. Solid 1 Water React. Flam. Gas 1	 H250, H260
YIP613	7778-74-7 REACH Registration number: 01-2120764842-47-0006	Potass. perchlorate (60-75 %) Oxid. Solid 1 Acute Tox. 4	  H271, H302	7440-32-6	Titanium (25-40%)	
TPP613	7778-74-7 REACH Registration number: 01-2120764842-47-0006	Potass. perchlorate (60-70 %) Oxid. Solid 1 Acute Tox. 4	  H271, H302	7440-32-6	Titan (25-30%)	 H250, H252
YIP661	7778-74-7 REACH Registration number: 01-2120764842-47-0006	Potass. perchlorate (35-50 %) Oxid. Solid 1 Acute Tox. 4	  H271, H302	7440-67-7	Zirconium (50-65 %) Pyr. Solid 1 Water React. Flam. Gas 1	 H250, H260
ZPP661	7778-74-7 REACH Registration number: 01-2120764842-47-0006	Potass. perchlorate (35-50 %) Oxid. Solid 1 Acute Tox. 4	  H271, H302	7440-67-7	Zirconium (50-65 %) Pyr. Solid 1 Water React. Flam. Gas 1	 H250, H260

Chemical Characteristics: Not applicable for sealed and unscathed Igniters.

4. First aid measures

When used under stated instructions, exposition of chemicals is not possible. Potential explosion may cause burns or other injury. In case of suspicion of any harm look up for medical help.

- 4.1 In case of inhalation:** Inhalation of igniters is not likely. Generally in case of inhalation of any chemical stop inhalation as soon as possible and move to fresh air. Avoid to coldness. In case of any harm look up for medical help.
- 4.2 In case of skin harm:** Potential explosion may cause burns or other injury. Look up for medical help.
- 4.3 In case eye damage:** Potential explosion may cause eye injury. Look up for medical help.
- 4.4 In case of swallowing:** Clean mouth. Look up for medical help.

Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

5. Firefighting measures

- 5.1 Extinguishing media:** **Suitable:** extinguishing foam, powder, carbon dioxide
Unsuitable: no known unsuitable extinguishing media
- 5.2 Special hazards arising from the substance or mixture:**
Burning igniters may explode and spread particles into surrounding area.
- 5.3 Advice for firefighters:** Keep safe distance from fire (min. 15m). Use/wear protective gloves, cloths, ear protection and approved safety glasses (also for handling of post fired Igniters)

6. Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures:**
During manipulation strictly observe the safety regulations (electrical discharge, ESD shoes, cotton protective cloths, safety glasses etc.). Avoid any el., heat, or another igniting sources.
- 6.2 Environmental precautions:** Not applicable
- 6.3 Methods and material for containment and cleaning up:** Inert igniters in water and dispose according chap.13

7. Handling and storage

- 7.1 Precautions for safe storage:**
Store only in original package in dry, well ventilated areas at 0 °C do +40 °C and rel. humidity 30 - 50 %.
- 7.2 Precautions for safe handling:**
Any manipulation or operation carry out only in ESD ensured areas. Unused igniters store in original package. In any case use package ensured against electrical discharge. Avoid any electrical, heat, or another igniting sources. Danger of self-ignition (295 °C (~563° F) in time of 60 s.).
- 7.3 Electrical specification:** Elementary electric safety rules, no additional requirements
- 7.4 Temperature rating:** T3; IIA - Mechanical undamaged igniters
- 7.5 Damaged Igniters:** Damaged igniters secure and dispose by water. Any spilled contend of igniters clean up by wet sorbent or wipe. Used sorbents or wipes store in closed bags without air access. Final disposal of waste according chap.13. Don't use hoovers or dry wipes, danger of ignition or fire!
- 7.6 Safe storage, incompatibilities:** Don't store together with oxidation or reduction agents.

Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

8. Exposure controls/personal protection

8.1 Control parameters:

Electrical specification:	IP54
Equipment/process:	The electric process equipment according to IP 54. Further requirements are based on ESD areas.
Temperature class:	T3; IIA Package keep tightly closed. Ventilation recommended.
Dustiness:	Not applicable
Total concentration:	Not applicable

8.2 Exposure controls:

Breathing protection:	Not applicable
Hand protection:	protective gloves are not necessary
Eye protection::	safety glasses
Hearing protection:	Not applicable
Body protection:	Cotton working clothes and ESD shoes (use grounding strip).

9. Physical and chemical properties

Not applicable for sealed and unscathed Igniters.

10. Stability and reactivity

10.1 Reactivity, chemical stability:

At appropriate storage and handling no hazardous reactions are known. Store only in original package in dry, well ventilated areas at 0 °C do +40 °C and rel. humidity 30 - 50 %. Store locked up. Don't store together with drugs, food, drinks, feed etc. Avoid an mechanical damage and heating of igniters. Danger of self-ignition (295 °C (~563° F) in time of 60 s.). Any manipulation or operation carry out only in ESD ensured areas.

10.2 Hazardous decomposition products:

In case of fire may nitrogen oxides, carbon oxides, particles of zirconium, lead or titanium occure.

11. Toxicological information

Not applicable for sealed and unscathed Igniters.

Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

12. Ecological information

Not applicable for sealed and unscathed Igniters.

13. Disposal considerations

Package: Dispose according to national or EU legislation.

Igniters: Active igniters are articles cat. 1.4 unit (ADR). Disposal can provide only authorized companies, with well trained staff by explosion. Disposal of contaminated sorbents and wipes only by incineration in appropriate facility. Until final disposal it must be keep wet.

Igniters	Waste name	Code (EWC)
Active	explosive components (for example air bags)	160110*
Unactive	ferrous metal	160117

14. Transport information

UN shipping name: Igniters

Transport hazard class: 1.4S

UN number.: 0454

15. Regulatory information

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures

European Agreement concerning the International Carriage of Dangerous Goods by Road (**ADR**)

Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

16. Other information

List and full text of used H-Phrases:

H203 Explosive; fire, blast or projection hazard

H302 Harmful if swallowed

H318 Causes serious eye damage

It's not allowed, to use this product in any other application then outlined in Chap. 1.2. It is the user's responsibility to comply to all appropriate regulations.

All above provided information are based on today's knowledge, it's not a guarantee of product characteristics and is not a Legally Binding Agreement.

Igniters

Date: 1.1.2010

Date of revision: 8.11.2019

Annex

1. Exposure scenario: Igniters for safety systems in automotive applications.

- 1.1 Sector of use: **SU 3:**
Industrial uses: Uses of substances as such or in preparations at industrial sites.
- AC 1:** Vehicles
Igniters for Airbag Gas generators, belt pretensioners, pyrotechnical battery clip's and other safety systems in automotive applications.
- 1.2 Process Category: **PROC1:** Use in closed process, no likelihood of exposure
- PC 11:** Explosives.
The propellant of the Igniters is hermetically closed from the environment. The housing parts are welded together or conjoined and can only be opened by destroying the units.
- 1.3 Environmental Release Category
ERC 5: Industrial use resulting in inclusion into or onto a matrix

2. Operational conditions and risk management measures

Use in closed process, no likelihood of exposure

- Physical State: Solid
- Frequency and duration of use: unlimited
- Technical onsite conditions and measures to reduce exposition: Keep container tightly closed.
- Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil:
Any manipulation or operation carry out only in ESD ensured areas. Unused igniters store in original package. In any case use package ensured against electrical discharge. Avoid any electrical, heat, or another igniting sources. Dangers of self-ignition (295 °C (~563° F) in time of 60 s.).
- Other operational conditions of use affecting environmental exposure
Use appropriate safety glasses or facial shield (EN 166), Cotton working clothes and ESD shoes (use grounding strip). Don't store together with chemicals, for example (oxidation or reduction agents).

3. Exposure estimation and references

Use in closed process, no likelihood of exposure. Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management. Measures/Operational Conditions outlined in Section 2 are implemented.

Damaged igniters secure and dispose by water. Any spilled content of igniters clean up by wet sorbent or wipe. Used sorbents or wipes store in closed bags without air access. Final disposal of waste according chap.13. **Don't use hoovers or dry wipes, danger of ignition or fire!**

4. Guidance for Downstream User to check compliance with the Exposure scenario

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.