

## Initiator

Material safety data sheet according to 1907/2006/EG, article 31.

### 1. Material/product and company identity

**Product:** Initiator

**Intended use:** Initiator for Airbag Gas generators, belt pretensioners, pyrotechnical battery clip's and other safety systems in automotive applications.

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Types:	Code:	Part-No:	Designation:	Charge:
	21	104333	AAZ140C130R202	YIM005/YIP613
	31	103017	AAZ120A626R201	YIM006/BKNO <sub>3</sub>
	31 lab.	103277	AAZ100A626R201	YIM006/BKNO <sub>3</sub>
	33	104744	AAZ120A634R201	YIM006/YIP613
	37	104540	AAZ141A632R201	YIM006/BKNO <sub>3</sub>
	39	104980	AAZ120A628R201	YIM006/BKNO <sub>3</sub>
	41	105629	AAZ101A643R201	YIM006/YIP613
	43	105758	AAZ101A628R201	YIM006/BKNO <sub>3</sub>
	45	106662	AAZ120A645R201	YIM006/BKNO <sub>3</sub>
	47	106743	AAZ120A643R201	YIM006/YIP613
	49	106844	AAZ120B628R201	YIM006/BKNO <sub>3</sub>
	51	106885	AAZ100B626R201	YIM006/BKNO <sub>3</sub>
	53	106884	AAZ120B634R201	YIM006/YIP613
	55	107076	AAZ120B643R201	YIM006/YIP613
	57	107090	AAZ100B643R201	YIM006/YIP613
	59	107464	AAZ130B643R201	YIM006/YIP613
	61	107814	AAZ120A643R204	YIM006/YIP613
	63	107973	AAZ120A651R204	YIM006/YIM005
	65	108506	AAZ121A643R204	YIM006/YIP613
	67	108423	AAZ124A643R204	YIM006/YIP613
	69	108435	AAZ125A625R204	YIM006/YIP661
	71	108600	AAZ124B634R201	YIM006/YIP613
	73	108652	AAZ124A634R204	YIM006/YIP613
	75	108745	AAZ127A625R204	YIM006/YIP661
	77	108883	AAZ120A634R204	YIM006/YIP613
	79	108882	AAZ120A625R204	YIM006/YIP661
	81	108890	AAZ132A634R204	YIM006/YIP613
	83	108888	AAZ132A625R204	YIM006/YIP661
	85	108659	AAZ100A634R204	YIM006/YIP613
	87	108453	AAZ100A625R204	YIM006/YIP661
	89	108909	AAZ100A634R204	YIM006/YIP613
	91	108747	AAZ100A625R204	YIM006/YIP661
	93	108961	AAZ128A563R204	YIM006/YIP661
	95	108960	AAZ100A563R204	YIM006/YIP661
	97	108958	AAZ134A625R204	YIM006/YIP661

## Initiator

### 2. Hazard Identification

Principle dangers:



Xn harmful to health  
E explosive

**General:**

The sealed and unscathed initiator without exterior influence create no health risks (refer chapter 7)

**Particular hazards**

R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition.  
R5 Heating may cause an explosion  
R22 Harmful if swallowed  
R41 Risk of serious damage to eyes

**Classification:**

The classification corresponds to the actual EG-lists, and additional information from trade literature and company publishing.

### 3. Composition/Information or ingredients

The propellant of the initiator is hermetically sealed from the environment (during storage and shipping)  
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-No:	Content Identity	R-sentence	CAS-No:	Content Identity	R-sentence
BKNO <sub>3</sub>	7440-42-8	Boron	Xn; R 22	7757-79-1	Potassium nitrate	O; R 8
YIM005	7778-74-7	Potassium perchlorate	Xn,  O; R 9-22	573-83-1	Potassium picrate	T  Xn, R 23/24/25
YIM006	7778-74-7	Potassium perchlorate	Xn,  O; R 9-22	7440-67-7	Zirconium powder	F; R 15-17
YIP613	7778-74-7	Potassium perchlorate	Xn,  O; R 9-22	7440-32-6	Titanium powder	F; R 15-17
YIP661	7778-74-7	Potassium perchlorate	Xn,  O; R 9-22	7440-67-7	Zirconium powder	F; R 15-17

**Chemical Characteristics:** Not applicable for sealed and unscathed initiators.

**Additional Tip:** For safety risks refer Pt. 16.

## Initiator

### 4. First Aid procedures

<b>General information:</b>	N/A
<b>After Inhalation:</b>	N/A
<b>After Skin-contact:</b>	N/A
<b>After Eye-contact:</b>	N/A
<b>After Swallowing:</b>	consult a doctor immediately. Keep the involved relaxed.

### 5. Fire-Fighting procedures

<b>High Risks:</b>	Fired initiators may become dangerous projectiles.
<b>Extinguishing Media:</b>	common extinguishers (extinguish at safe distance)
<b>Unsuit. Extinguishing:</b>	no known unsuitable Extinguishing Media
<b>Protective equipment:</b>	use breathing apparatus
<b>Fire fighting:</b>	use/wear protective gloves, cloths, ear protection and approved safety glasses (also for handling of post fired initiators)

### 6. Procedures at accidental release

<b>Precautions:</b>	Personnel ESD protection procedure conductive shoes, cotton clothing, grounding strap on wrist. Wear approved safety glasses, protective gloves and ear protection  Keep electrical and thermal ignition sources away from initiator
<b>Environm. protection:</b>	none
<b>Clean up:</b>	Fill into original packaging and dispose as scrap according to Pt 13.

### 7. Handling and storage

<b>Storage:</b>	No special requirements if the material remains in original packaging. Otherwise the conditions for "Technical equipment" apply.
<b>Handling:</b>	Processing and manipulation only at ESD protected workplaces. Keep initiator in original package. Keep away from heat, electrical sparks and open flame. Auto ignition temperature approximately at 160 ° C (~320 ° F)
<b>Electrical specification:</b>	no special requirements.
<b>Temperature rating:</b>	T3; IIA Keep Container tightly closed
<b>Damaged initiators:</b>	Wipe up powder with a wet rag. Place wet rags in a plastic garbage bag, seal air tight and dispose Clean up by means of vacuum cleaner is prohibited.
<b>Storage class:</b>	1.4 S
<b>Storage information:</b>	Do not store with any oxidant or reducer
<b>Additional information:</b>	refer pt. 15

**Initiator****8. Exposition limitation and personal protection****Additional information for creation "Technical facilities":****Electrical specification:** IP65**Equipment/process:** The electric process equipment must be according to IP 65.  
Further the requirements are based on ESD workplaces**Temperature class:** T3 IIA**Working environment's threshold limit values should be supervised****Dust limit value** N/A**Mass concentration** N/A**Personal protective equipment****Respiratory protection:** N/A**Hand protection:** Wear grounding strap on wrist**Eye protection:** Wear approved safety glasses**Hearing protection:** Mandatory**Protective clothing:** Antistatic clothes as well as electrically conductive shoes**9. Physical and chemical properties**

Not applicable for sealed and unscathed initiators

**10. Stability and reactivity****General:** At appropriate storage and handling no hazardous reactions are known.**Conditions to avoid:** Avoid damage (outflow of propellant) and thermal stress (ignition at about 160 ° C / 320 ° F) of the initiator.

Avoid damaging of housing, friction, impact and electrostatic charge.

**Haz. decomposition:** In case of fire, nitric oxide and carbon monoxide may be generated.**11. Toxicological information**

Not applicable for sealed and unscathed initiators.

**12. Ecological information**

Not applicable for sealed and unscathed initiators.

## Initiator

### 13. Disposal considerations

- Packaging:** Disposal / Recycling of packaging according to official rules.
- Igniters:** The disposal of unfired and fired initiators has to be made according to official, lawful rules and regulations (refer to Altauto-Richtlinie 2000/53/EG)
- Unfired initiators are subject to hazard class 1.4 s respectively therefore the disposal may only be executed by appropriate, authorized companies.
- Firing of Igniters may exclusively be done by specially trained personnel.

Initiator	Waste declaration	Waste code CH, EU (VeVA, AVV)
Unfired	explosive units (from Airbags)	160110
Fired	----	can be disposed as regular scrap metal

### 14. Transport information

- Product:** Initiator
- Class ADR/RID:** 1.4S
- UN-No:** 0454

### 15. Regulatory information

- Identification:** Identification according to EWG-guideline: The product is classified and standardized according to EWG guidelines.

**Principle dangers:**



- Xn harmful to health  
E explosive

**R sentence:**

- R3: Extreme risk of explosion by shock, friction, fire or other sources of ignition.
- R5: Heating may cause an explosion.
- R22: Harmful if swallowed.
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