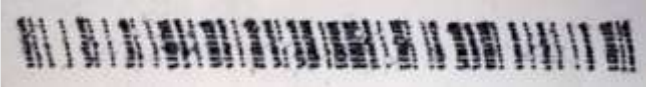
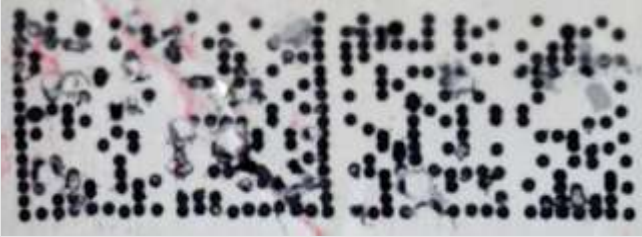


# Readability of the new Explosives Marking



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# Test with Articles of several Manufacturers

Datalogic Gryphon (standard recording device)



- Cartrigded Explosives
- Detonators
- Detonating Cord
- Packagings
- Pallets with stretch-foil

- 2 persons – 4 items – up to 20 trials for each item



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# Cartridged Explosives

- Direct printing with Inkjet Printers



- Pre-printed adhesive Labels or Stickers



# Cartridged Explosives - Labels

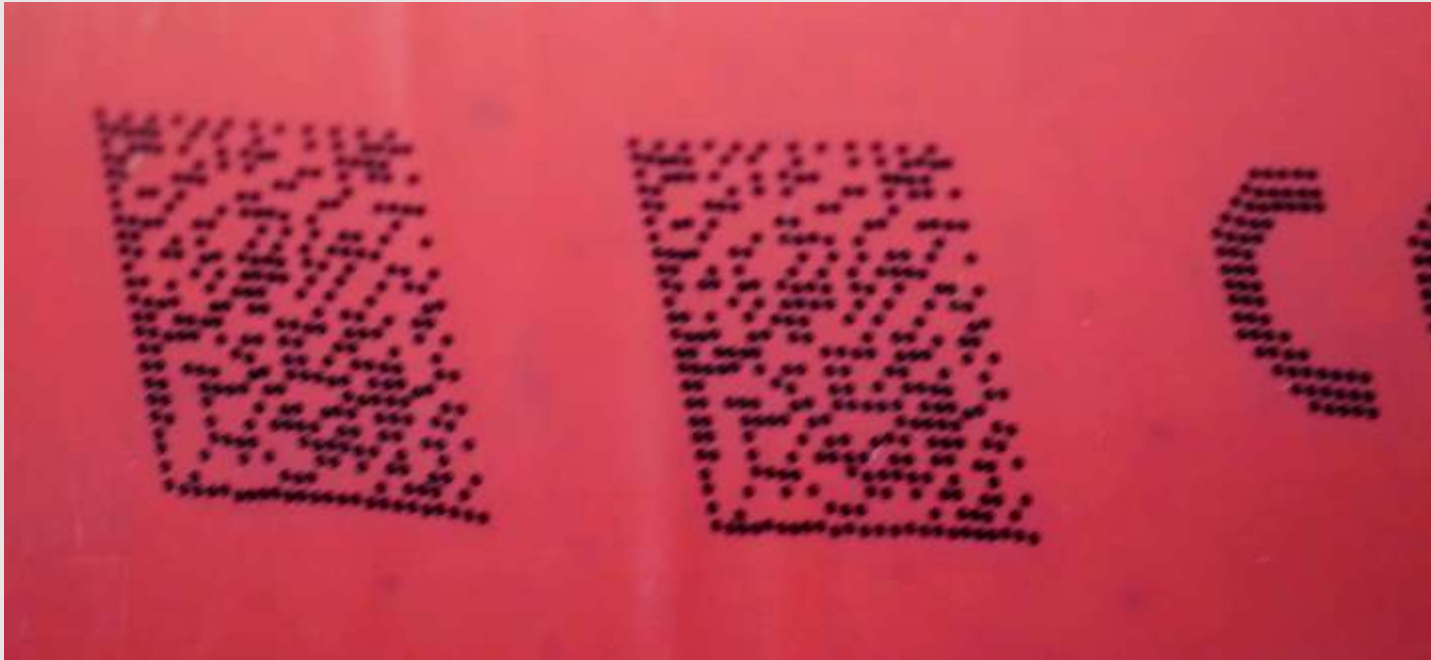


- readable immediately



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# Cartridged Explosives - Inkjet Printing



- readable after 2 - 5 attempts

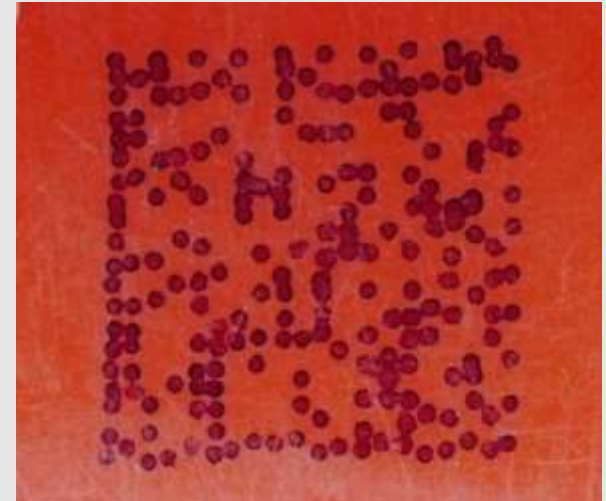


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# Cartridged Explosives - Inkjet Printing



cartridge diameter 65 mm



diameter 25 mm

- in average 10 attempts
- the left marking is sometimes not readable



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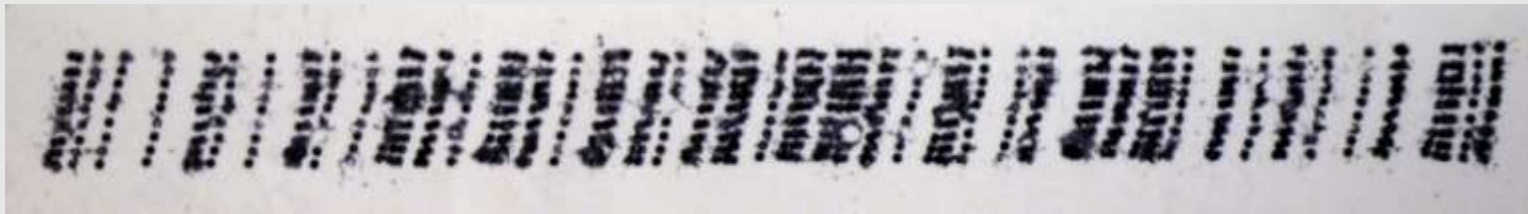
# Cartridged Explosives - Inkjet Printing



- not readable (even with „clean“ printings)



# Cartridged Explosives - Inkjet Printing



- readable with 3 – 5 attempts (the distance between barcode and scanner is important)



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# Cartridged Explosives – Packagings

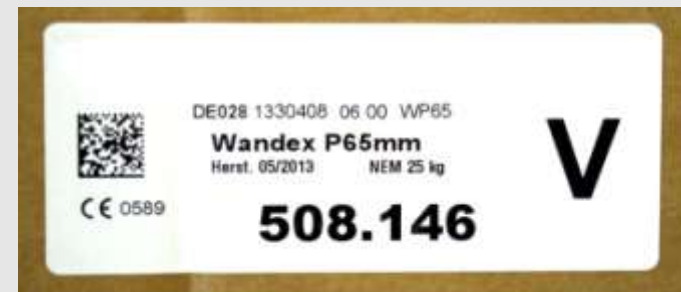
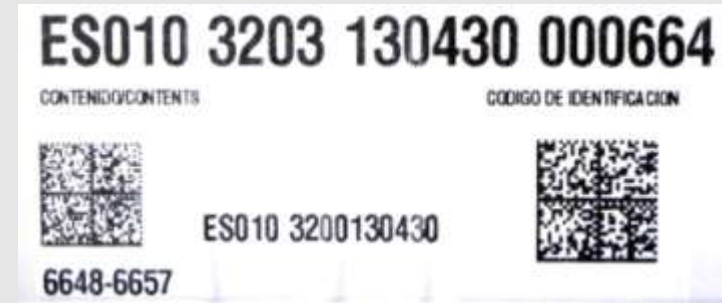
- pre-printed adhesive labels are usual



- one exception: direct printing with a barcode



# Cartridged Explosives - Packagings



- Data Matrix: generally readable at the first attempt



# Cartridged Explosives - Packagings



- one exception: these data matrix are not readable (also the codes on the cartridges of this manufacturer are not readable)



## ANFO in Sacks



- sometimes not readable if the data matrix code is in a fold (caused by wrapping with stretchfoil)



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## Detonating Cord ( $\emptyset \leq 8,5$ mm)



- Generally adhesive labels on reels and packagings: normally readable at the first attempt



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## Detonators (electric and non-electric)



- adhesive labels on the wires or tubes: generally readable at the first attempt



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# Detonators – Inner Packagings



- for transport inner packagings are mandatory



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# Detonators



- Labels often stick together (not overlapping labels)



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# Pallets wrapped with Stretch-foil



- sometimes readable, sometimes not



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## Data structure – Items

- without Application Identifiers (also barcode)

**XX001-20342307**

- without Application Identifiers

**XX004133657000705023**

- AI(90) and AI (250)

**90XX010#2503200130430006656**

- AI(90) and AI(250) with additional AI

**90XX001#250200000006384247#240D  
EU2.06.10ZCSE#1010201106#95PC**



## Data structure – Associated Labels

**90XX009#250SAX243913403943000**

**XX001-203423**

**camp025**

**□□□240DEU2.24.11ZCSE#1010191339#217135#11  
12070337000004#91PC#920001373023#93000220#**

**90XX001#250200000004768906#11130211240DMS06.  
0.20CSE#1010200207#3010#310300000991PC#92000  
1488304#9310#95BAG#3710**



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## Data structure – Associated Labels

**90XX010#2503203130430000664#111**  
**304002003240INGR0655300#3010#37**  
**10#3100000025#3300000026**

**(90)XX010(250)3203130430000664(11)**  
**130400(20)03(240)INGR0655300(30)10**  
**(37)10(3100)000025(3300)000026<3-**  
**0@1!0-6648:DEC\*0-9**



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# Data structure – Logistical Units

**90XX028#25013112790000#240WA65**

**(90)XX004(250)5204130419000001(240)SCZN020  
2000(20)04(11)130400(30)80(37)40(3100)000320(  
3300)000656(3110)016000(99)<4-3-0-0-0-0-0-0-0-  
0-0-0-0-0-0-0-0-0@1!0-1-1-6-9-1-10-9-15-20-24-22-  
28-26-36-34-41-46:DEC%0-23\*0-1\*2-34;\*6\*0;\*2\*0-  
1\*2-3\*4-5\*6-7\*8-9\*10-11\*12-13\*14-15\*16-17\*18-  
19\*20-21\*22-23\*0-1\*2-3\*4-5\*6-7\*0-1\*2-3\*0;\*5\*0-  
1\*2-34;\*6\*0;\*3\*0-1\*0;\*5\*0-1\*2-3\*4-5\*0;\*9\*0-1\*2-  
3\*0;\*6\*0-12;\*4\*0-1\*2-3**



# Re-Storage after a Blasting



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# Re-Storage after a Blasting



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# Re-Storage after a Blasting



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