



Vale Learning - 21139 - CAR 09 - Explosives

Hello, welcome to the course of **CAR 09 – Explosives**.

In this knowledge journey we will explain the requirements for this critical activity, through videos, texts, graphics and interactions.

Expand your knowledge, review your activities and behaviors. The obsession with security is one of the key behaviors of those who are part of Vale!

Good course!

≡ Welcome

≡ Context

≡ Explosives

≡ Application

≡ Critical Accidents

≡ Responsibilities

≡ In Practice

Welcome



Watch the video in full to continue.

Context



For starters, let's better understand why we have the CARs and **how important they are to Vale and to you.**

Click on the following video and start your journey of knowledge!



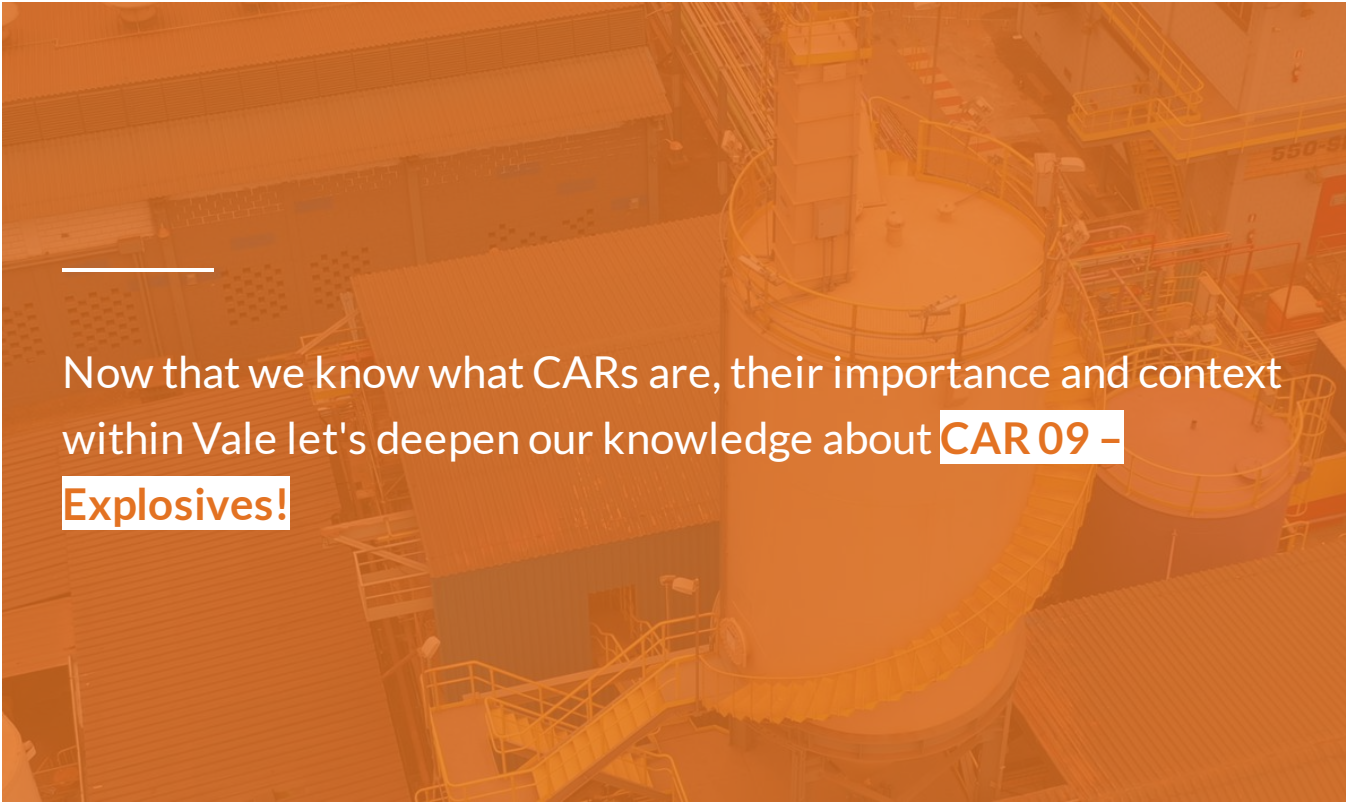
Context

CARs



Watch the video in full to continue.

Explosives



Now that we know what CARs are, their importance and context within Vale let's deepen our knowledge about **CAR 09 – Explosives!**

Check out the following video!



Watch the video in full to continue.

***Keep an eye
on the CAR!***



CAR 09: Explosives

It aims to establish minimum requirements to avoid accidents during all activities related to the **transportation, storage, manufacture, handling, loading, detonation and disposal of explosives**, including safe practices and distancing.



Complete the content above before moving on.

Application

A photograph of two workers in an industrial setting, overlaid with an orange tint. Both workers are wearing white hard hats, safety glasses, and face masks. They are also wearing identification badges. The worker on the right is pointing upwards with his right hand. The background shows industrial structures, including pipes and railings.

Now let's introduce
the applications of **CAR 09**.

Check out the following video!



Applicability

CAR 09



Watch the video in full to continue.

Critical Accidents



Safety is not the absence of risks, but the presence of protective barriers. Moreover, safety is to respect what can and should be done, in the right way, with due care.

Here at Vale, unfortunately, there were critical and unwanted accidents, and this is what **you see in the following video:**



Critical Incidents.

CAR 09



Watch the video in full to continue.

Let us now know or **recall an incident** that occurred in Vale related to work with explosives and **understand what were the main contributing factors** associated with and **what the requirements of CAR 09 could have been applied** to avoid it.

Incident Report

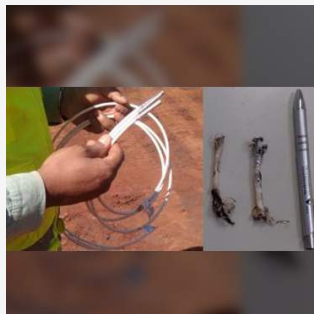
i **Date:** 10 23 2018
Location: Paraopeba Complex, Minas Gerais Brazil.
Occurrence Type: N2.

Event description:

After inspecting and obtaining agreement from the team regarding the siege blocks, the blaster arrived at the front loaded alone, positioned the truck in an escape route, took the fuzes in the square and, realizing that there was a leftover, decided to burn it before start the fire. He then moved to the opposite end of the fire start and, outside the mooring/loading boundary, **lit the fuse.** Then he went to carry out the final inspection of the mooring. **After a few minutes realizing that it hadn't detonated, he picked up the accessory that detonated in his left hand.**



Blasting with explosives / cap fuse initiator (conventional).



Cap fuse available for use and part of the conventional fuse blown and fuse found in the area after the accident.

CAR 09 Requirements associates

9.6.h.I - Open-pit mine —

Open-pit mine: use of electronic fuse in 100% of the fire plan, in the development and production phases. If the blaster identifies the need to use 2 (two) detonators per hole, both must be electronic (the second detonator is used as a backup detonator).

☒ *Missing requirement.*

☐ *Present and flawed requirement.*

NOTE 2 —

It is prohibited to use cap fuse (conventional) as an explosive charge initiator!

☒ *Missing requirement.*

☐ *Present and flawed requirement.*

9.7.6.b - Misfire: —

Misfire: In case of a failed fire at initiation, wait at least 30 minutes, in addition to checking the characteristics of each location.

☒ *Missing requirement.*

() *Present and flawed requirement.*



Complete the content above before moving on.



Main Lessons Learned

It is mandatory to remove the man from the dangerous zone (fire line) at the time of initiation of detonation of explosives.

CAR 09 is carried out for all critical activities related to transport, storage, fabrication, handling, loading, blasting and disposal of explosives in open pit mines, underground mines and construction projects.

Aspects such as the use of an electronic fuze to initiate blasting with explosives should be part of the planning and execution of the fire plan for any activity involving CAR 9, as required in requirements 9.6.h.I and 9.6.h.II.

In the reported event, the activity was carried out without the implementation of the necessary control measures. A cap fuse (conventional) was used to initiate the fire, which is prohibited by CAR 09.



If the electronic fuse had been applied and all safety aspects involved in carrying out the activity with explosives, the incident could have been avoided.



Complete the content above before moving on.

Misfire verification.

The employee went to carry out the final authorization of the mooring. After a few minutes realizing that the explosive had not detonated, he picked up the detonated accessory in his left hand.

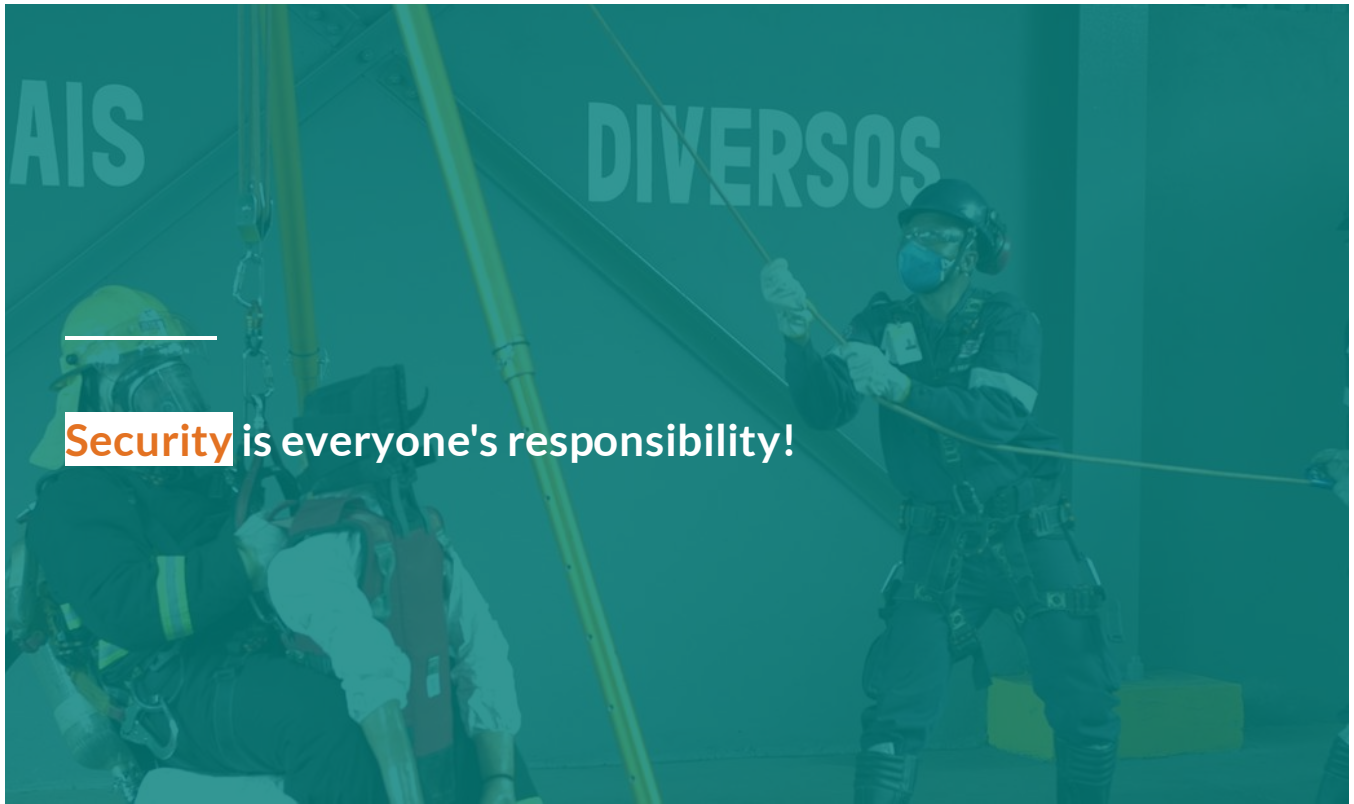
The CAR 09, in item 9.7.6.B, recommends that in case of a failed fire at initiation, a minimum of 30 minutes must be waited, in addition to checking the characteristics of each location, before entering an area.

The application and compliance with CAR 9 and other control measures aims to ensure the safety of all related problems.



Complete the content above before moving on.

Responsibilities



See the following video roles and responsibilities related to
CAR 09 and check out what is expected of you!



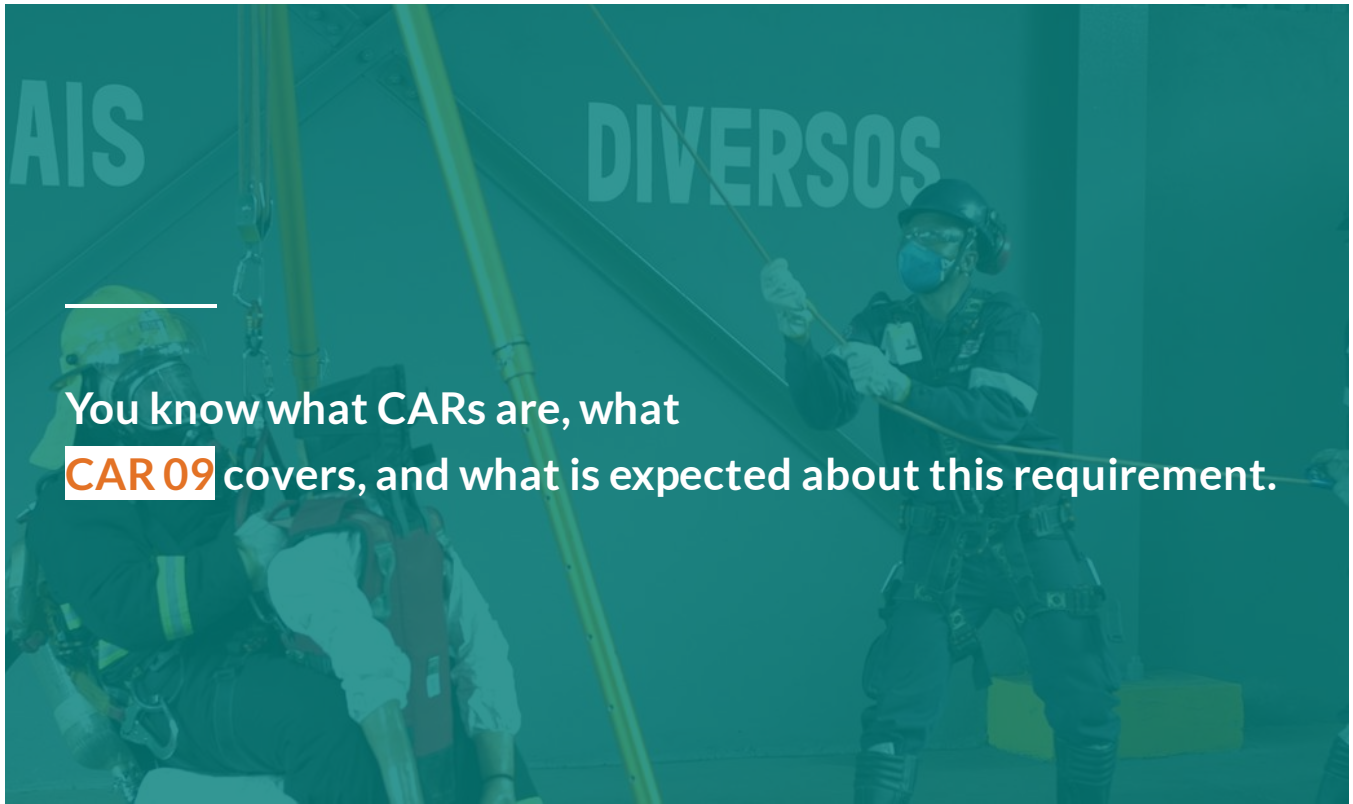
Roles and Responsibilities

CAR 09



Complete the content above before moving on.

In Practice





In Practice

CAR 09



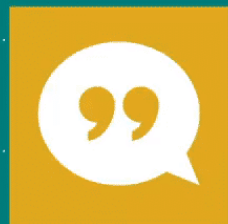
the expert's word



The CARs are guidelines that should be applied, in the day-to-day, in the routine of

each activity. Its adoption generates results
and makes a difference.

Check out the following video the word of a colleague who tells
us in his vision what the importance of CAR 09 is.



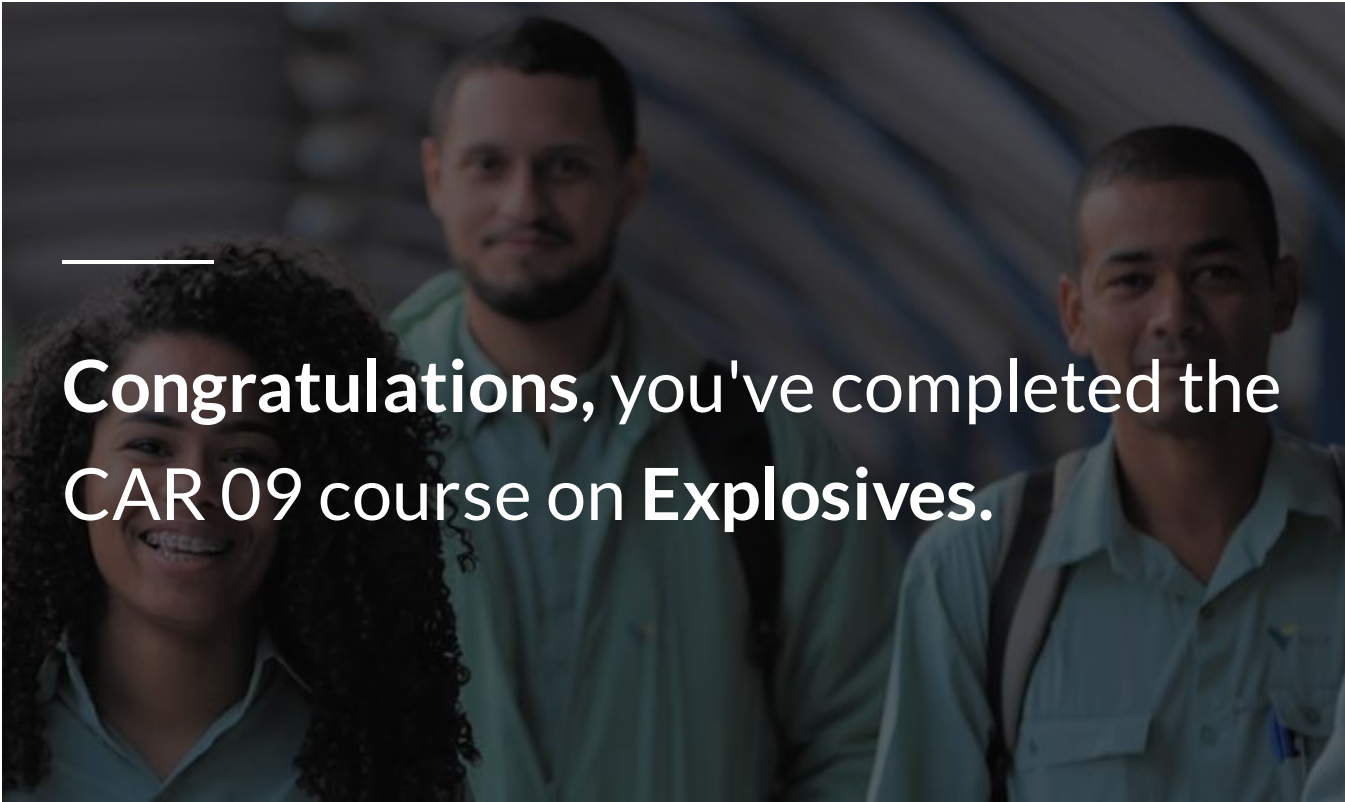
**Word of
Specialist**
CAR 09





Complete the content above before moving on.

Conclusion

A photograph of three people in military uniforms. On the left is a woman with dark curly hair, smiling. In the center is a man with a beard, looking slightly to the side. On the right is a man with short hair, looking forward. They are all wearing light blue or green military shirts. The background is dark and out of focus.

**Congratulations, you've completed the
CAR 09 course on Explosives.**



Encerramento

RAC 09



Also check out the courses of the other CARs. Apply the knowledge acquired here in your day to day, and good work.



Thank you for completing the

Vale Online Module Training.

Complete Your
Module Validation

PLEASE CLICK HERE