

Risk Assessment for RAPEX

General Information

Product

Product name: CO detectors

Product category: CO detectors

Description: This is a PROSAFE risk assessment template for CO detectors. It describes likely injury scenarios linked to non-conformity with the following clauses of EN50291-1:2010:

§4.7.4 Marking - scenario 1

§5.3 Detector too insensitive - scenario 2

§5.3 Detector too sensitive - scenario 3

§5.3.16 Sound output - scenario 4

§6.1 Battery fault warning - scenario 3

How to use

Users of the template should select the scenario(s) corresponding to the non-conformities identified for the product under assessment. All other scenarios can then be deleted. The probabilities are estimated in the remaining scenarios.

The scenarios presented in the template are likely scenarios. Users should ensure that the scenarios are suitable, that the steps are correct and that the injury level is appropriate.

Disclaimer

The template has been developed by a PROSAFE working group composed of market surveillance experts. The intention is to support market surveillance officials assessing the risk with a particular product as part of a market surveillance case.

The template is not authorized or endorsed in any way and it is not binding for Member State market surveillance authorities.

The contents of the original template is subject to change without notice.

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Product risks - Overview

- Scenario 1 : **Risk to be determined** - The CO detector does not give appropriate instructions for installation so the user installs it in a place where it can't detect carbon monoxide soon enough. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector does not detect it. The user inhales carbon monoxide and is intoxicated.
- Scenario 2 : **Risk to be determined** - A user has installed a CO detector that is too insensitive. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector does not detect it in time. The user inhales carbon monoxide and is intoxicated.
- Scenario 3 : **Risk to be determined** - A user has installed a CO detector that is too sensitive. The CO detector has given a number of false alarms. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector detects it, but the user believes it is yet another false alarm and ignores it. The user inhales carbon monoxide and is intoxicated.
- Scenario 4 : **Risk to be determined** - A user has installed a CO detector that provides an inadequate sound level. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector detects the carbon monoxide, but the user doesn't hear the sound signal. The user inhales carbon monoxide and is intoxicated.
- Scenario 5 : **Risk to be determined** - A user has installed a CO detector where the battery fault warning doesn't work. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The battery in the CO detector is out so the detector does not detect the carbon monoxide. The user inhales carbon monoxide and is intoxicated.

Overall risk : **Risk to be determined**

Scenario 1 : Other consumers - Insufficient warning texts and symbols

Product hazard

Hazard Group: Product operating hazards
Hazard Type: Insufficient warning texts and symbols

Consumer

Consumer Type: Other consumers - Consumers other than vulnerable or very vulnerable consumers

How the hazard causes an injury to the consumer

Injury scenario: The CO detector does not give appropriate instructions for installation so the user installs it in a place where it can't detect carbon monoxide soon enough. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector does not detect it. The user inhales carbon monoxide and is intoxicated.

Severity of Injury

Injury: Poisoning from substances (ingestion, inhalation, dermal)
Level: 4 Irreversible damage to nerve system
Fatality

Probability of the steps to injury

Step(s) to Injury	Probability
Step 1: The CO detector does not give appropriate instructions for installation so the user installs it in a place where it can't detect carbon monoxide soon enough.	1
Step 2: An indoor fireplace or oven emits carbon monoxide due to insufficient air supply.	1
Step 3: The CO detector does not detect it.	
Step 4: The user inhales carbon monoxide and is intoxicated. (Other injury types and levels are possible.)	

Calculated probability:

To be determined

Overall probability:

To be determined

Risk of this scenario:

Risk to be determined

Scenario 2 : Other consumers - Operational inadequacy

Product hazard

Hazard Group: Product operating hazards
Hazard Type: Operational inadequacy

Consumer

Consumer Type: Other consumers - Consumers other than vulnerable or very vulnerable consumers

How the hazard causes an injury to the consumer

Injury scenario: A user has installed a CO detector that is too insensitive. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector does not detect it in time. The user inhales carbon monoxide and is intoxicated.

Severity of Injury

Injury: Poisoning from substances (ingestion, inhalation, dermal)
Level: 4 Irreversible damage to nerve system
Fatality

Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	A user has installed a CO detector that is too insensitive.	1
Step 2:	An indoor fireplace or oven emits carbon monoxide due to insufficient air supply.	1
Step 3:	The CO detector does not detect it in time. (The probability depends upon the actual performance that was found in the laboratory test.)	
Step 4:	The user inhales carbon monoxide and is intoxicated. (Other injury types and levels are possible.)	

Calculated probability:

To be determined

Overall probability:

To be determined

Risk of this scenario:

Risk to be determined

Scenario 3 : Other consumers - Operational inadequacy

Product hazard

Hazard Group: Product operating hazards
Hazard Type: Operational inadequacy

Consumer

Consumer Type: Other consumers - Consumers other than vulnerable or very vulnerable consumers

How the hazard causes an injury to the consumer

Injury scenario: A user has installed a CO detector that is too sensitive. The CO detector has given a number of false alarms. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector detects it, but the user believes it is yet another false alarm and ignores it. The user inhales carbon monoxide and is intoxicated.

Severity of Injury

Injury: Poisoning from substances (ingestion, inhalation, dermal)
Level: 4 Irreversible damage to nerve system
Fatality

Probability of the steps to injury

Step(s) to Injury	Probability
Step 1: A user has installed a CO detector that is too sensitive.	1
Step 2: The CO detector has given a number of false alarms. (The probability depends upon the nature of the fault and the actual sensitivity level as revealed by the laboratory test.)	
Step 3: An indoor fireplace or oven emits carbon monoxide due to insufficient air supply.	1
Step 4: The CO detector detects it, but the user believes it is yet another false alarm and ignores it.	
Step 5: The user inhales carbon monoxide and is intoxicated. (Other injury types and levels are possible.)	

Calculated probability:

To be determined

Overall probability:

To be determined

Risk of this scenario:

Risk to be determined

Scenario 4 : Other consumers - Insufficient warning signals

Product hazard

Hazard Group: Product operating hazards
Hazard Type: Insufficient warning signals

Consumer

Consumer Type: Other consumers - Consumers other than vulnerable or very vulnerable consumers

How the hazard causes an injury to the consumer

Injury scenario: A user has installed a CO detector that provides an inadequate sound level. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The CO detector detects the carbon monoxide, but the user doesn't hear the sound signal. The user inhales carbon monoxide and is intoxicated.

Severity of Injury

Injury: Poisoning from substances (ingestion, inhalation, dermal)
Level: 4 Irreversible damage to nerve system
Fatality

Probability of the steps to injury

	Step(s) to Injury	Probability
Step 1:	A user has installed a CO detector that provides an inadequate sound level.	1
Step 2:	An indoor fireplace or oven emits carbon monoxide due to insufficient air supply.	1
Step 3:	The CO detector detects the carbon monoxide, but the user doesn't hear the sound signal.	
Step 4:	The user inhales carbon monoxide and is intoxicated. (Other injury types and levels are possible.)	

Calculated probability:

To be determined

Overall probability:

To be determined

Risk of this scenario:

Risk to be determined

Scenario 5 : Other consumers - Operational inadequacy

Product hazard

Hazard Group: Product operating hazards
Hazard Type: Operational inadequacy

Consumer

Consumer Type: Other consumers - Consumers other than vulnerable or very vulnerable consumers

How the hazard causes an injury to the consumer

Injury scenario: A user has installed a CO detector where the battery fault warning doesn't work. An indoor fireplace or oven emits carbon monoxide due to insufficient air supply. The battery in the CO detector is out so the detector does not detect the carbon monoxide. The user inhales carbon monoxide and is intoxicated.

Severity of Injury

Injury: Poisoning from substances (ingestion, inhalation, dermal)
Level: 4 Irreversible damage to nerve system
Fatality

Probability of the steps to injury

Step(s) to Injury	Probability
Step 1: A user has installed a CO detector where the battery fault warning doesn't work.	1
Step 2: An indoor fireplace or oven emits carbon monoxide due to insufficient air supply.	1
Step 3: The CO detector does not detect the carbon monoxide because the battery is out. (The probability depends upon the nature of the non-compliance, e.g. will the alarm give warnings other than audible, is the warning completely absent or does it warn at too low battery voltages, etc.)	
Step 4: The user inhales carbon monoxide and is intoxicated. (Other injury types and levels are possible.)	

Calculated probability:

To be determined

Overall probability:

To be determined

Risk of this scenario:

Risk to be determined

