Innovative Solutions Canada Program

Challenge EN578-170003/31: Portable package Auto Sampler Challenge

Attachment 1
Questions and Answers #1 to #20

This document contains questions and answers related to this challenge.

Question #1:

Are samples taken while inside the building or somewhere outside (ex. roadside)?

Response #1:

Mostly inside buildings.
Possibility of usage outside.

Question #2:

What is considered “portable”? Could be moved from desk to desk? Could be held and used in a vehicle? Or small like a backpack?

Response #2:

The government will consider any solution proposed that is portable: not too large in size and not too heavy.
Must be easily moved from area to area.
Must be able to be held and used in a vehicle.
The size of a small backpack would be acceptable.

Question #3:

What do the bags with substances look like? Like a random wrapped ball?

Response #3:

A single layer of aluminum foil bag, a single layer of plastic bag or a combination of one layer of aluminum foil bag with one layer of plastic bag.

Question #4:

The challenge states that the packages need to be opened and then resealed. How are they resealed?

Response #4:

The government will consider various sealing options, as long as the opening created for sampling will be closed (sealed) in an efficient way. The package that was opened to take a sample must be resealed so that it does not leak in any way.

Question #5:

What shape are the packages?

Response #5:

Packaging material is plastic bag or foil bag or a combination of the two bags. Weighing less than 1 kg. The bags are usually rectangular and will have no particular shape other than fit to its content.

Question #6:

How are the packages closed? - lid that need to turn (like bolt), push/pull or is it plug. All above?

Response #6:

Prior to sampling, the package is a bag usually closed with a "ziplock" type of closure or heat sealed.

Question #7:

Approximately, what is the sample size needed for analysis?

Response #7:

Approximately from 100 to 500 mg. slightly larger could also be considered.

Question #8:

What are the sample bottles made from? Glass or plastic? What size and share are they? Are they empty or is there liquid or powder inside? If they are empty, is there a need to add chemicals; liquid or powder?

Response #8:

Sample bottle could be made of plastic (e.g. Nalgene) or glass.
Size large enough for sample of approximately 100 to 500 mg in size. Ideally not too large to facilitate transportation after sampling.
Bottle will be empty prior to sampling the unknown substance.
No other chemical will be added with the unknown substance to the bottle.
Note: The bottle containing the sample of the unknown substance will eventually be shipped to the CBSA laboratory for analysis.

Question #9:

How are the bottles sealed? Do they have a plug or lid? Is there a need to turn or push/pull? Plastic or rubber?

Response #9:

Any sealed bottles will be considered.

Question #10:

What does it mean “to seal”? Just to close with lid/plug or something in addition to?

Response #10:

To seal means to close in such a way that no leakage or spill will occur.

Question #11:

How much time is needed for analysis?

Response #11:

There is no analysis involved.
The challenge is to develop an automated solution that would enable Border Services Officers to handle and sample unknown, potentially highly toxic substances safely.

Note: The bottle containing the sample of the unknown substance will eventually be shipped to the CBSA laboratory for analysis.

Question #12:

When is a test complete? - by time, visual, like change color? Something else?

Response #12:

There is no testing involved.
The challenge is to develop an automated solution that would enable Border Services Officers to handle and sample unknown, potentially highly toxic substances safely.

Note: The bottle containing the sample of the unknown substance will eventually be shipped to the CBSA laboratory for analysis.

Question #13:

How many samples need to be taken from one bag? One for all kinds of opiods or several? If several, how many samples and how many grams per each?

Response #13:

One sample from one bag.

Question #14:

The equipment (auto sampler) should take one sample at a time or ongoing? If it is ongoing, how many bottles could be inside the equipment at a time?

Response #14:

One package (bag) will be sampled at a time. From which, one sample of the unknown substance will be transferred into one bottle.

Question #15:

Are there conditions during analysis, like ambient temperature, vibration, centrifuge?

Response #15:

The challenge is to develop an automated solution that would enable Border Services Officers to handle and sample unknown, potentially highly toxic substances safely.
There is no analysis involved.

Note: The bottle containing the sample of the unknown substance will eventually be shipped to the CBSA laboratory for analysis.

Question #16:

Is the analysis qualitative? If it is quantitative, how do you find concentration?

Response #16:

There is no analysis involved.
The challenge is to develop an automated solution that would enable Border Services Officers to handle and sample unknown, potentially highly toxic substances safely.

Note: The bottle containing the sample of the unknown substance will eventually be shipped to the CBSA laboratory for analysis.

Question #17:

If the equipment is for analysis of more than one sample at a time, how should the bottles be labeled? Manually before inserted into the equipment?

Response #17:

The equipment is not for analysis.
The challenge is to develop an automated solution that would enable Border Services Officers to handle and sample unknown, potentially highly toxic substances safely.

Question #18:

The challenge states that "parts of the device which come into contact with the unknown substances are disposable". What about bottles for analysis?
Should they be taken out of the device to show to the owner of the package and should they be disposed of somewhere manually?

Response #18:

The bottle containing the sample will eventually be shipped to the CBSA laboratory for analysis, where it will be disposed appropriately.

There is no requirement to show the bottle to the owner of the package, if applicable.

Question #19:

Is the device expected to make a decision about the presence of opiods of does the operator make the decision? If by the device, what is criteria?

Response #19:

No.
The challenge is to develop an automated solution that would enable Border Services Officers to handle and sample unknown, potentially highly toxic substances safely.

Question #20:

How should the device be decontaminated (ex. Inside walls)? Should it be wiped with water, or using chemicals? Is it one general chemical substance that could be used to neutralize all kind of opiods?

Response #20:

Decontamination should be done in such way to ensure safety of the user.
There are several cleaning formulas marketed to clean highly toxic substances, including opioids.

Note: All surfaces that were in contact with the unknown powder of the device must be disposable.