

# Surface Contamination Corrosivity Report

Sampler ID: 132467

Report Date: 25.01.2023

Sample Type: Tape Lift (see page 2 for sampler scan)

## SCOPE:

This test report provides valuable insights into potential dangers from surface contamination in Mission Critical Facilities so that remediation measures may be implemented BEFORE corrosion actually occurs.

## TEST RESULTS:



**Chlorides:**

0.397 ug/cm<sup>2</sup>

The test result is lower than the limit of 5 ug/cm<sup>2</sup> for electronic devices and installations.

The following limits for residual chlorides, relevant in terms of corrosion chemistry, have been established by international organizations and insurers (Standard KSC-STD-0001-D):

5 µg/cm<sup>2</sup> for electronic devices and installations.

10 µg/cm<sup>2</sup> for buildings and general installations.



**pH:**

7.300 pH

Good. pH is within the 5 to 8.5 range and has little corrosive impact on most metals.

When contaminants have a pH between 5 and 8.5, the pH has little corrosive impact on most metals. However, the corrosion rate increases rapidly when the pH is outside of that range. pH levels of 5 or below can lead to extreme corrosion rates and premature pitting of metallic objects. Studies have shown that even small amounts of low pH (acidic) contaminants can corrode metals.

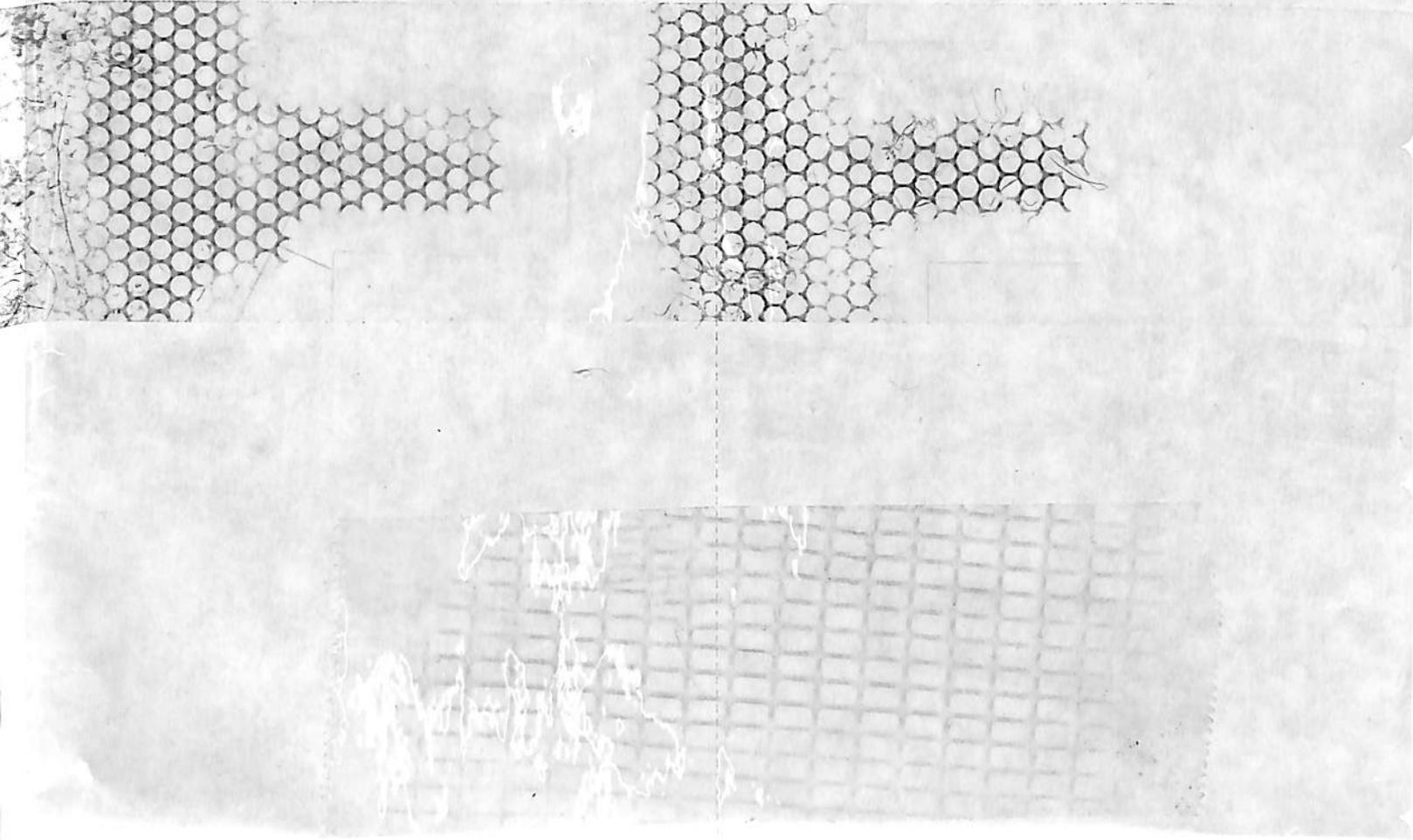
## INFORMATION:

Sources of corrosive contaminants include dust, smoke, chemicals and acids. Elevated levels of chlorides are very serious for technical installations since they cause severe corrosion of system components, especially when air humidity is higher than 40 RH. Even small amounts of smoke from burning PVC can release large amounts of highly corrosive hydrochloric acid (HCL). Chlorides may also be contained in concrete dust which can be released by improper maintenance procedures and fire extinguishing gas dumps, particularly if there are large amounts of residual particulates on room and plenum surfaces. NASA engineers identified chlorides for their extreme corrosion effect in the late 70's and they established a chloride threshold limit of 5 micrograms per square centimeter (µg /cm<sup>2</sup>) as the acceptable limit on surfaces (KSC-STD-0001-D).

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