



IONIC CONTAMINATION LEVELS

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Low levels of contamination are normally present on all electronic equipment; being derived from fingerprints, saliva, perspiration, skin flakes, respiration, etchants, the fluxes utilised in soldering processes, plastics used for die attachment, moulding compounds, or more directly from the ambient operating environment. This is considered to be normal and forms part of the original equipment manufacturers determination of the service life of any given item of electronic equipment. However, in the case of a contamination incident the risk of corrosion is greatly increased by increasing the levels of ionic contamination to unwelcome and potentially harmful levels, especially those left in an uncontrolled atmosphere after contamination.

Regenisys Ltd uses a proprietary "Quick Test" indicator strip to check for the presence of Ionic Contamination. These indicators provide an immediate qualitative indication of the degree of contamination (measured in micrograms per square centimetre - $\mu\text{g}/\text{cm}^2$), found to be present on the surfaces tested.

An explanation of the levels of contamination applicable to electronics is shown in the table below.

Level $\mu\text{g}/\text{cm}^2$	Explanation
1 – 5 $\mu\text{g}/\text{cm}^2$	Normal background levels found in most industrial & commercial applications.
5 – 10 $\mu\text{g}/\text{cm}^2$	Light contamination
10 – 15 $\mu\text{g}/\text{cm}^2$	Medium contamination
15 – 20 $\mu\text{g}/\text{cm}^2$	Medium to high contamination
>20 $\mu\text{g}/\text{cm}^2$	Very high contamination

- At >5 $\mu\text{g}/\text{sqcm}$, electronic equipment should be decontaminated to ensure longevity and reliability.
- At >10 $\mu\text{g}/\text{sqcm}$, electronic equipment requires decontamination to eliminate any possibility of short to medium term functional failure and to ensure longevity and reliability. As long as the effected equipment is stored in a controlled environment, decontamination can be deferred for several weeks.
- At >20 $\mu\text{g}/\text{sqcm}$, electronic equipment requires prompt attention to remove the contamination.
- At 50-100 $\mu\text{g}/\text{sqcm}$, electronic equipment must be decontaminated immediately.

If the total time of exposure can be limited to no more than a few hours, concentrations as high as 200-300 $\mu\text{g}/\text{sqcm}$ can still be successfully removed from electronics.