

# Cleanroom headaches in Santa's workshop...

We all know that Santa has an amazing workshop where his elves make toys, but did you know that he also has a cleanroom or two?

These are the places where clever elves make gifts requiring sophisticated electronic gadgetry like mobile phones, drones, and a host of children's favourite electrically powered toys, all of which need specialist manufacturing technology so that rogue particles don't block their circuitry. Reindeer hair is the most common hazard, along with sugar particles and sawdust.

Perfumes, cosmetics and other beauty products need to be made in cleanrooms too, because they mustn't contain contaminants harmful to people when applied to their skin. Mr Claus does not want to spread reindeer flu around the globe, but don't worry, the elves have it all under control.

## North Pole winter temperatures as low as -40°C

Cleanrooms also control variables like temperature, static, and humidity as these can affect Santa's manufacturing too – and that's a tough ask at the North Pole!

Santa's main problem, however, is that the naughty elves don't like to follow essential protocols.

## Cardboard packing boxes

Whether they are left over from deliveries of raw materials or are packaging ready for finished products, cardboard boxes (or even Christmas wrapping paper) should have no place inside the cleanroom. These items introduce large amounts of particles, which seriously compromises the toy count.

## Drinks and sweets

It's a well-known fact that elves have a sweet tooth, and they have also been known to try and snatch a sneaky sip of Santa's sherry. However, whilst that is fun elsewhere in Santa's grotto, it is not appropriate in the cleanrooms. They don't always remember that, in a cleanroom, any kind of food or drink can introduce harmful bacteria or other contaminants – not to mention the extra particulate from those mince pie crumbs!

## **Make-up, false eyelashes and scratching that itch...**

Every elf wants to look their best at Christmas but inside the cleanroom, their flowing locks, long beards and wide eyes must stay under their protective garments to prevent stray hairs from getting into the air. The more glamorous elves love to add even more potential for contamination with false eyelashes and beard extensions – which could wipe out any electrical circuit!

Chief elf must remind his team not to scratch their faces, as this can release skin cells onto their gloves which then find their way onto *Every Single Thing* that they touch.

And Mrs Claus regularly reminds the elves that make-up, even the lovely rouge on their cheeks, is easily shed, which is why, much to the elves' dismay, Santa has told them to save it for the Christmas hall.

## **Mobile phones and other handheld devices**

The elves are rarely without their mobile phones, and inevitably, a wide range of tiny fragments accumulate in the crevices and ports of the handsets and their covers. Santa tells the elves, '*If you must bring them into the cleanroom, keep them in the special sterile packs we provide,*' and that will solve the problem.

## **'Sorry, I forgot...'**

Elves have notoriously bad memories, and while they may start out with good intentions (gowning up and donning full PPE), you can guarantee that two minutes after going inside the cleanroom, they will realise they left something essential outside – so they pop out- in their protective gear, not realising that they're carrying contaminants with them when they go back in.

## **And what about your little helpers?**

So, if you want to give your employees a gentle reminder on the essentials of good cleanroom behaviour, *ISO cleanroom* founder Toni Horsfield is happy to share her advice, key checklists and can recommend CCN courses for all your naughty elves. Give her a call on 0161 529 2816 or email [sales@isocleanroom.co.uk](mailto:sales@isocleanroom.co.uk) for her tips on cleanroom Elf and Safety!