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NASA TECH BRIEF

Manned Spacecraft Center

Improved Method of Using Paraformaldehyde as a Disinfectant

The time and temperature required to disinfect enclosed compartments using paraformaldehyde (a solid polymer of formaldehyde) can be decreased by vaporizing the powdered material from a water slurry. In conventional practice, a plate holding dry, powdered paraformaldehyde is heated to approximately 533°K (500°F) to vaporize appreciable amounts of the material, which decomposes to release gaseous formaldehyde. This relatively high temperature is required because of the low heat transfer rate through the dry powder granules and across the voids that form between the granules as vaporization proceeds.

In a water slurry of the paraformaldehyde, the heat transfer rate is greater, and total evaporation of the mixture (with decomposition of the paraformaldehyde) occurs at a plate temperature that is approximately 167°K (300°F) below that required to vaporize the dry, powdered material. In addition, the fire and explosion hazard at this lower temperature is substantially reduced; in the event of an accidental spill, the slurry will present less of a personnel hazard and can be cleaned up more readily than the powdered material.

Note:

No additional documentation is available. Specific questions, however, may be directed to:

Technology Utilization Officer
Manned Spacecraft Center, Code JM7
Houston, Texas 77058
Reference: B71-10096

Patent status:

No patent action is contemplated by NASA.

Source: James F. Milner of
North American Rockwell Corp.
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