

February 2003

Re: Health and Safety Information – Use of V-Pyrol in UV Curable Screen Inks

Dear Valued Customer:

V-pyrol (1-ethenyl-2-pyrrolidone), a raw material used in the formulation of UV inks since the early 1970s, is a substance used to aid substrate adhesion and to increase cure speed. In the early 1990s, two V-pyrol manufacturers conducted a two-year inhalation study. The study exposed laboratory rats to vapor concentrations of V-pyrol at 0, 5, 10, or 20 parts per million (ppm). Benign tumors of the nasal cavity were identified in those rats exposed to concentrations at 5, 10, and 20 ppm and malignant tumors were identified in those rats exposed to 10 ppm and 20 ppm. Liver tumors were also observed in female rats exposed to concentrations at 45 ppm for three months.

At that time, the preliminary data was sufficient for the two manufacturers to recommend an exposure limit of 0.1 ppm to workers exposed to V-pyrol. As of January 2003, the American Conference of Governmental Industrial Hygienists (ACGIH) has adopted a voluntary Threshold Limit Value (TLV) of 0.05 ppm. Currently, the Occupational Safety and Health Administration (OSHA) does not have a Permissible Exposure Limit (PEL) for V-pyrol. Nazdar recommends meeting the ACGIH TLV of 0.05 ppm.

Nazdar discontinued the use of V-pyrol in their standard UV curable screen ink lines. However, some UV special products may contain V-pyrol, which will be noted on the label and material safety data sheet (MSDS). Nazdar continues to be a distributor of V-pyrol to its customers who have determined a need for this product.

Based on regulatory requirements and guidelines from the Department of Transportation (DOT), products containing specific amounts of V-pyrol meet the definition of a hazardous material. These products should be shipped using the following shipping description:

Toxic liquids, organic, NOS (N-Vinyl-2-Pyrrolidone), 6.1, UN2810, III

The following list contains, but is not limited to, products which should be shipped using the above shipping description:

- CUP9008 UV Ceramic Grinding Medium
- CARE55 UV Adhesion Promoter
- CARE56 UV PAS 132 Initiator
- 282450PS Special Dry Erase Clear
- 286440PS Special Photoinitiator Solution

Under normal usage conditions, V-pyrol should pose no significant health hazard as long as appropriate precautions are taken. The hazards posed by V-pyrol and recommended precautions are outlined in the Material Safety Data Sheet (MSDS) and labels. Employers must provide a safe working environment for their employees. To assist in determining the levels of V-pyrol in the workplace, facilities can contact their worker's compensation insurance carrier, state or federal OSHA consultation office, local university, or consulting firms for information on air monitoring services.

*For more information contact:
Nazdar Shawnee, Regulatory Compliance Department*