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Brief 71-10331

# NASA TECH BRIEF

## *Manned Spacecraft Center*



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### Solvation Agent for Disulfide Precipitates from Inhibited Glycol-Water Solutions

A new solvation agent eliminates organic disulfide precipitates from glycol-water coolant solutions containing mercaptobenzothiazole (MBT) which is used as a corrosion inhibitor. These precipitates not only decrease the effectiveness of the coolant solutions, but can also clog the flow channels in radiators or other heat-transfer systems in which such solutions are used. The new solvation agent is an adduct of triethanolamine (TEA) and sodium sulfite ( $\text{Na}_2\text{SO}_3$ ). Small amounts (about 0.01%) of the solvation agent added to MBT-inhibited glycol-water solutions markedly reduce the amount of disulfide precipitate present.

The solvation agent is prepared by adding a slight excess of TEA to saturated aqueous solution of  $\text{Na}_2\text{SO}_3$ . The components are then thoroughly mixed and the mixture is allowed to stand for several hours, after which it is filtered. The residue on the filter is washed several times with ethyl ether, leaving the

TEA/ $\text{Na}_2\text{SO}_3$  adduct (a crystalline solid), which constitutes the solvation agent.

#### Note:

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

Technology Utilization Officer  
Manned Spacecraft Center, Code JM7  
Houston, Texas 77058  
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#### Patent status:

No patent action is contemplated by NASA.

Source: M. F. Taylor of  
The Boeing Company  
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