PRODUCT NAME: MOP40 GARE
MSDS DATE: 03/17/89
MSDS NUMBER: MOP 40

Johnson Matthey, Inc.
1397 King Road
West Chester, PA 19380
215-648-8000

Product Identification

CHEMICAL NAME / SYNONYM / TRADE NAME: Mother of Pearl
MOP40

CHEMICAL FAMILY:
Mixed organometallic complexes, resins, organic solvents.

CHEMICAL FORMULA: MOP 40

CAS NUMBER: mixture

DOT HAZARD CLASS: Flammable Liquid
UN/NA NUMBER: not known / UN1263

Hazardous Ingredients

<table>
<thead>
<tr>
<th>INGREDIENT</th>
<th>%</th>
<th>TLV</th>
<th>STEL</th>
<th>PEL</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Xylenes</td>
<td>20-25%</td>
<td>100ppm</td>
<td>150ppm</td>
<td>100ppm</td>
<td>1330-20-7</td>
</tr>
<tr>
<td>*N-Butanol</td>
<td>1-2%</td>
<td>50ppm</td>
<td></td>
<td></td>
<td>71-36-3</td>
</tr>
</tbody>
</table>

* Denotes SARA Section 313 Title 111 Toxic Chemicals

Physical Data

SPECIFIC GRAVITY (H2O=1): <1
VAPOR PRESSURE (mm Hg.): not known
PERCENT VOLATILE: at least 66%
VAPOR DENSITY (AIR=1): >1
EVAPORATION RATE: not known
SOLUBILITY IN WATER: Insoluble
APPEARANCE AND ODOR: Thin green liquid, solvent odor

Fire and Explosion Hazard Data

FLASH POINT (METHOD USED): 65F (Setaflash Closed Cup)
AUTOIGNITION TEMP.: not known
FLAMMABLE LIMITS: not known

DISCLAIMER:
"Employers should use this information only as a supplement to other information gathered by them, and should make independent judgments of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user."
Johnson Matthey, Inc.
MSDS FOR PRODUCT: MOP40 GARE

Fire and Explosion Hazard Data

| LEL       | not known       |
| UEL       | not known       |
| EXTINGUISHING MEDIA | CO2 or dry chemical |

SPECIAL FIRE FIGHTING PROCEDURES:
Fire fighters should wear NIOSH/MSHA approved pressure demand self contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS: none known

Health Hazard Data

THRESHOLD LIMIT VALUE: None established for mixture.

EFFECTS OF OVEREXPOSURE:
Solvents can cause defatting of the skin as well as contact dermatitis in susceptible individuals. Vapors can irritate eyes, nose, and throat. Solvents can act as central nervous system depressants, exhibiting narcotic and anesthetic effects. Overexposure can cause headache, nausea, vomiting, drowsiness, diarrhea, liver and kidney damage.

None of the product constituents are on the NTP, IARC, or OSHA lists as potential carcinogens.

EMERGENCY AND FIRST AID PROCEDURES:
SKIN: In case of contact, immediately wash skin with soap and plenty of water. Remove contaminated clothing and shoes. Wash or clean before reuse.
EYE: Rinse for 15 minutes and contact a physician immediately.
INHALATION: Remove from exposure to fresh air. Give artificial respiration if not breathing. If breathing is difficult, give oxygen. Contact a physician immediately.
INGESTION: Contact a physician immediately.

Reactivity Data

STABILITY: Stable

CONDITIONS TO AVOID:
Avoid heating substance where it may be inhaled, and avoid open flame.

INCOMPATIBILITY:
Oxidizers such as chlorates, perchlorates, permanganates, and nitrates.

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂, oxides of titanium.

HAZARDOUS POLYMERIZATION: Will not Occur
Reactivity Data

Continued from last page...

CONDITIONS TO AVOID: none known

Precautions for Safe Handling and Use

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Prevent waste. Promptly absorb spill. Conserve and accumulate material and all mops, wipes, sand or vermiculite used to clean up a spill. Remove sources of ignition. Cover drains to prevent entry into waterways.

Wear personal protective equipment (clothing and gloves) when handling spilled materials. (See Section on Special Protection Information, below.)

WASTE DISPOSAL METHOD:
Return accumulated residues, wipes, mops, sand and vermiculite to refinery for metals recovery. Store material in appropriate containers. Follow local, state and federal regulations for packaging, labeling, manifesting, transportation and disposal.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
Keep away from heat, open flame, and sources of ignition. Store as flammable liquid.

Store in a cool dry place away from incompatible materials identified in the Reactivity Section.

OTHER PRECAUTIONS:
Follow good industrial hygiene and housekeeping practices. Do not eat, drink, or smoke while working with this material. Wash hands before eating, drinking, smoking, or applying cosmetics, and at the end of the work shift. Avoid contact with eyes, skin, or clothing. Do not ingest. Avoid prolonged breathing of dust. Keep container closed when not in use. Use with adequate ventilation.

Control Measures

RESPIRATORY PROTECTION (SPECIFY TYPE):
If there is a possibility that the TLVs or PELs may be exceeded, a NIOSH/MSHA approved respirator with organic vapor/dust-mist-fume filters represents the minimum level of respiratory protection.
To insure proper respirator selection and use, refer to the requirements of 29 CFR 1910.134 and the latest addition of ANSI Z 88.2.

VENTILATION:

References

REFERENCE:
References
