Material Safety Data Sheet

MSDS

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standard must be consulted for specific requirements.

Chemical Name:

MSDS No.

Date of Preparation:

Revision #

Section 1 – Chemical Product and Company Identification

Product / Chemical Name:
Manufactuer's Name:
Address
Chemical Formula:
CAS Number:
Synonyms:
Derivation:
General Use:
Vendors:

Emergency Telephone Number:

Telephone Number for Information

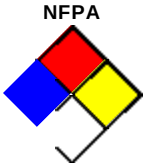
Date Prepared

Section 2 – Composition / Information on Ingredients

Hazardous Components (Specific Chemical Identity; Common Names(s))	OSHA PEL	ACGIH TLV	Other Limits Recommended	% (optional)

Section 3 – Hazards Identification

☆ ☆ ☆ ☆ ☆ ***Emergency Overview*** ☆ ☆ ☆ ☆ ☆



Potential Health Effects

Primary Entry Routes:
Target Organs
Acute Effects:
- **Inhalation**
- **Eye**
- **Skin**
- **Ingestion**

Carcinogenicity
Medical Conditions Aggravated by Long-Term Exposure
Chronic Efffects

Section 4 – First Aid Measures

Inhalation

Eye Contact

Skin Contact

Ingestion

Note to Physician:

Section 5 – Fire-Fighting Measures

Flash Point: lowest temperature at which a flammable liquid gives off enough vapor form an ignitable mixture with air. At a glance you can tell from a low flash point that a material represent a fire hazard: for example, the flash point of gasoline is –43 deg C (-45 deg F).
Autoignition Temperature*:* tells you how hot a material must be before it will set itself on fire without a flame or spark.
LEL: Lower Explosive Limit – the lowest concentration at which a chemical's vapors will cause an explosion. Concentrations below the LEL are considered "too lean"
UEL: Upper Explosive Limit – the maximum concentration at which a chemical's vapor will cause an explosion. Concentrations greater than the UEL are considered "too rich"
Flammable Limits: details about the minimum and maximum concentrations of vapors, so you can prevent fires. Generally concentrations that are greater than the LEL but less than the UEL
Extinguishing Media*:* which extinguishing material to use (water, foam, fog, carbon dioxide, dry chemical, etc.)
Unusual Fire or Explosion Hazards: any special conditions or precautions concerning fire and explosion that are unique to the chemical
Hazardous Combustion Products*:*
Fire-Fighting Instructions: Special procedures that are recommended during fire fighting.
Fire-Fighting Equipment: Special equipment or safeguards that are recommended during fire fighting.

Section 6 – Accidental Release Measures

Spill / Leak Procedures:

Small Spills:

Large Spills:
Containment:
Cleanup:
Regulatory Requirements:

Section 7 – Handling and Storage

Handling Precautions:

Storage Requirements:

Regulatory Requirements*:*

Section 8 – Exposure Controls / Personal Protection

Engineering Controls

Ventilation:

Administrative Controls:

Respiratory Protection:

Protective Clothing / Equipment:

Contaminated Equipment*:*

Section 9 – Physical and Chemical Properties

Physical State:
Appearance and Odor:
Odor Threshold:

Vapor Pressure:
Saturated Vapor Density (Air=120 kg/m3, 0.075 lb/ft3):
Formula Weight:
Specific Gravity (H2O=1, at 4 deg C):
Octonol/Water Partition Coefficient:
Henry's Law Constant (H)

Water Solubility:
Other Solubilities
Boiling Point:
Freezing Point:
Viscosity:
Refractive Index:
Surface Tension:
% Volatile:
Evaporation Rate (n-BuAc=1):
Ionization Potential

Section 10 – Stability and Reactivity

Stability – how likely it is that a chemical will decompose, creating a dangerous situation. If the material is unstable, the MSDS lists the conditions that would create a hazardous product.

Incompatibility – lists the materials to avoid with the chemical to prevent a hazardous reaction. (i.e. acid and bases)

Hazardous Decomposition Or Byproducts – conditions and materials that can cause a chemical to break down and become a hazard or what may be produced when the chemical reacts with other substances. These include temperature extremes, ignition sources, and other chemicals. Sometimes, the product of a reaction is far more hazardous than the chemical itself.

Hazardous Polymerization – large amounts of energy may be released when 2 or smaller molecules combine. If this is a danger, the MSDS lists the conditions that can lead to it.

Section 11 – Toxicological Information

Acute Effects:

Multiple Dose Toxicity Data:

Acute Inhalation Effects:

***See NIOSH, RTECS ( ) for additional toxicity data**

Section 12 – Ecological Information

Ecotoxicity:

Environmental Fate:

Environmental Degradation:

Soil Absorption / Mobility:

Section 13 – Disposal Considerations

Disposal:

Section 14 – Transport Information

Shipping Name: **Shipping Symbols:** **Hazard Class:** **ID No:** **Packing Group:** **Label:** **Special Provisions (172.102):**	**DOT Transportation Data (49 CFR 172.101)** **Packaging Authorizations** **a) Exceptions:** **b) Non-bulk Packaging:** **c) Bulk Packaging:**	**Quantity Limitations:** **a) Passenger Aircraft, or Railcar:** **b) Caro Aircraft Only:** **Vessel Stowage Requirements** **a) Vessel Stowage** **b) Other**

Section 15 – Regulatory Information

EPA Regulations:

Toxic/Flammable Substance Subject to Accidental Release Prevention (40 CFR 68.130):
RCRA Hazardous Waste Number (40 CFR 261.33):
Classified as a RCRA Hazardous Waste (40 CFR 261.21):
CERCLA Hazardous Substance (40 CFR 302.4):
CERCLA Reportable Quantity (RQ):
SARA 311/312 Codes:
SARA Toxic Chemical (40 CFR 372.65):
SARA EHS (Extremely Hazardous Substance) (40 CFR 355):

OSHA Regulations:

Other Regulations:

Section 16 – Other Information

Additional Comments:

References:

Prepared by:
Industrial Hygiene Review:
Medical Review