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| **CHEMICAL &**  **PROPERTIES** | **HEALTH**  **HAZARD** | **FIRE &**  **REACTIVITY**  **HAZARD** | **SPILLS & LEAK**  **HAZARD** | FIRST AID |
| 1. AMMONIA (NH3) **Colourless gas Pungent**  **Odour**  **Melting point- 770C**  **Boiling Point – 330C**  **Auto ignition -**  **Temp.- 6510C**  **Vapour density 0.597**  **Explosive limit -**  **% by Vol**  **Lower - 16**  **Upper - 25**  **TLV : 25 ppm** | **Avoid inhalation**  **& body contact**  **can be fatal**  **Irritation of Eyes,**  **Nose & throat.**  **Coughing and**  **Vomiting, Cold**  **Burn due to liquid**  **Use respiratory**  **Protection.** | **Can catch fire.**  **Hazard is**  **moderate when**  **exposed to heat**  **Or flame.**  **Lightly reactive.**  **Wear full**  **Protection.** | **Great danger of Fire,**  **Explosion or gas cloud.**  **Wear full protection**  **along with BA set or**  **online respirator in the**  **Spill area. Stay upwind.**  **Keep people away.**  **Avoid body body**  **Contact.**  **Minimise rising cloud**  **By water spray.** | **INHALATION**  **Remove victim to fresh**  **Air, Inhale vapour of**  **Worm water and give**  **Artificial respiration.**  **EYE CONTACT**  **Wash with plenty of**  **water or solution of 0.5**  **to 1% Alum.**  **SKIN CONTACT**  **Wash with plenty of**  **water & apply a lotion**  **consisting of 5% solution**  **of acetic citric, tartaric or**  **Salicylic acid.** |
| 2. CHLORINE (Cl2) **Greenish yellow gas.**  **Molecular weight 70.9**  **Melting point - 1010C**  **Boiling point - 34.50C**  **Density – 1.47**  **Vapour Density 2.49**  **TLV : 1 ppm** | **Dangerous gas.**  **Can be fatal.**  **Extremely irritant**  **to eyes, nose &**  **throat.Vapour can**  **be cause headache,**  **coughing, pain in**  **the body.**  **Breathing may**  **reach to point**  **where death is**  **possible by suffo-**  **cation. Wear full**  **protection along**  **with BA set or**  **Online respirator.** | **Fire hazard is**  **moderate. Can**  **reach to cause**  **fire or explosion**  **if comes in**  **contact with**  **Turpentine,**  **Ammonia and**  **Hydrocarbons.** | **Shut of the outlet of**  **Leakage if possible.**  **Ensure the running of**  **the absorption system.**  **Wear full protection**  **along with BA set or**  **online respirator in the**  **spill area. Stay upwind.**  **Keep people away.**  **Avoid body contact.**  **Minimize rising cloud**  **By water spray.** | **INHALATION**  **Removing victim to fresh**  **Air and give artificial respiration.**  **EYE&SKIN CONTACT**  **Wash with plenty of**  **Water.**  **Remove**  **Contaminated clothing.** |
| **3. SULPHURIC ACID**  **(H2SO4)**  **Colourless liquid,**  **Solubility in water.**  **Boiling point – 2900C**  **Melting point – 10.50C**  **Specific gravity – 1.84**  **Odour less, miscible**  **with alcohol** | **Inhalation may**  **Injure lungs,**  **Ingression or**  **contact with skin**  **caused severe burns** | **Emits tonic**  **Fumes of SOx;**  **Hazardous**  **Combustion**  **Reactive &**  **Corrosive in**  **Nature.** | **Shut of the outlet of**  **Leakage if possible.**  **Ensure the running of**  **the absorption system.**  **Wear full protection**  **Of PVC suit & shoes.**  **Dozing of lime in**  **Spillage area.**  **Keep people away.**  **Avoid body contact.**  **Diluted by water spray.** | **INHALATION**  **Removing victim to fresh**  **Air and give artificial respiration.**  **EYE&SKIN CONTACT**  **Wash with plenty of**  **Water.**  **Remove**  **contaminated clothing** |
| **4. PHOSPHURIC ACID**  **( H3PO4 )**  **Thick liquid, soluble in**  **Water. Odour- pleasant**  **Boiling point - >1300C**  **Specific gravity – 1.89** | **Inhalation may**  **Injure lungs,**  **Ingression or**  **contact with skin**  **caused severe burns** | **Emits tonic**  **Fumes of POx;**  **Violent reaction**  **With Sodium Te-**  **tra Hydroborate.**  **Reacts with Chlo-**  **-ride+Stainless**  **steel to form**  **Hydrogen gas.** | **Avoid contact with**  **Liquid or vapours.**  **Provide face shield,**  **Rubber hand gloves,**  **PVC Suit &shoes.** | **INHALATION**  **Removing victim to fresh**  **Air and give artificial respiration.**  **EYE&SKIN CONTACT**  **Wash with plenty of**  **Water.Remove**  **contaminated clothing** |

**5.0Chemical Name:SULPHUR**

**CAS:7704-34-9**

**RTECS #:WS4250000**

**= Wt:100.**

**Other REC Limits:10 MG/M3**

**===================== Hazards Identification**

**Health Hazards Acute and Chronic:**

**EYES: SULPHUR DUST IS MILDLY IRRITATING TO EYES.**

**SKIN: UPON CONTINUED OR REPEATED CONTACT MAYCAUSE IRRITATION OF THE SKIN.**

**INHALATION: INHALATION OF DUST CAN CAUSE RESPIRATORY TRACT IRRITATION.**

**INGES TION: SULPHUR HAS A LOW ORDER OF TOXICITY.**

**Effects of Overexposure:EYES: MILD IRRITATION.**

**SKIN: IRRITATION.**

**INHALATION: RESPIRATORY TRACT IRRITATION.**

**INGESTION: SULPHUR HAS A**

**LOW ORDER OF TOXICITY.**

**======================= First Aid Measures**

**First Aid:EYES: RINSE WITH WATER FOR 10-15 MINUTES. CONSULT A PHYSICIAN SHOULD IRRITATION PERSIST.**

**SKIN: WASH WITH SOAP AND WATER. CONSULT . A PHYSICIAN SHOULD SYMPTOMS OR IRRITATION OCCUR.**

**INHALTION: MOVE PERSON TO FRESH AIR. IF SYMPTOMS OR IRRITATION OCCUR, SEE PHYSICIAN. INGESTION: IF LARGE AMOUNTS ARE SWALLOWED, IMMEDIATELY GET MEDICAL HELP.**

**===================== Fire Fighting Measures**

**Flash Point:=207.C, 404.6F**

**Autoignition Temp:=232.C, 449.6F**

**Lower Limits:35 G/M3**

**Upper Limits:1400 G/M3**

**Extinguishing Media:WATER FOG, STEAM, CARBON DIOXIDE. EXTINGUISH SMALL FIRES BY GENTLY COVERING WITH SAND OR FINE EARTH TO EXCLUDE OXYGEN.**

**Fire Fighting Procedures:WEAR SELF-CONTAINED BREATHING APPARATUS. WATER STREAM MAY SPLATTER MOLTEN SULFUR.**

**Unusual Fire/Explosion Hazard:DUST OR VAPORS CAN FORM EXPLOVE MIXTURE WITH AIR.**

**================== Accidental Release Measures**

**Spill Release Procedures:USE NORMAL CLEAN-UP PROCEDURES FOR SPILLS.( MECHANICAL SWEEPING OR VACUUM DEVICES NOT RECOMMENDED.)**

**ELIMINATE SOURCES OF POSSIBLE IGNITION. AVOID UNNECESSARY DUSTING.**

**============= Exposure Controls/Personal Protection =============**

**Respiratory Protection:WHERE EXPOSURE TO THE DUST IS APPARENT, A**

**HALF-FACE DUST/MIST RESPIRATOR MAY BE WORN.**

**Ventilation:DILUTION VENTILATION IS A SATISFACTORY CONTROL. IF**

**CONDITIONS CREATE DISCOMFORT TO WORKER, LOCAL EXHAUST SYSTEM SHOULD BE CONSIDERED.**

**Protective Gloves:PROTECTIVE GLOVES**

**Eye Protection:WEAR SAFETY GLASSES**

**Other Protective Equipment:CLEAN BODY COVERING CLOTH**

**Supplemental Safety and Health**

**SYNONYMS: SULFUR, FLOWERS OF SULPHUR.**