

JK PAPER MILLS  
JAYKAYPUR  
MATERIAL SAFETY DATA SHEET

DATE : 21.01.14

SI No	Particulars	Details	SI No.	Dos & Don'ts
1.1	Substance / Name of Chemical	Chlorine		<b>DOs :</b> <b>a) Skin Contact:</b> ✓ Wash skin with soap and water for at least 15 minutes. Remove contaminated clothing and shoes. ✓ Get immediate medical attention. ✓ Thoroughly clean and dry contaminated clothing and shoes before reuse. Destroy contaminated shoes. <b>b) Eye Contact:</b> ✓ Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention. <b>c) Inhalation:</b> ✓ Remove to uncontaminated area. Give artificial respiration if not breathing. ✓ If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. <b>d) Ingestion:</b> ✓ Give large amounts of water or milk. ✓ Allow vomiting to occur. When vomiting occurs, keep head lower than hips to prevent aspiration. ✓ If person is unconscious, turn head to side. Get medical attention immediately <b>e) Fire Fighting Measures:</b> ✓ Evacuate personnel to a safe area. Wear self-contained breathing apparatus (SCBA) and full protective equipment. ✓ Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks.
1.2	Composition / Ingredients	Chlorine		
2	Physical & Chemical Properties	LPHYSICAL STATE: gas COLOR: yellow or green ODOR: distinct odor, irritating odor MOLECULAR WEIGHT: 70.906 MOLECULAR FORMULA: Cl <sub>2</sub> BOILING POINT: -31 F (-35 C) FREEZING POINT: -150 F (-101 C) VAPOR PRESSURE: 5168 mmHg @ 21 C VAPOR DENSITY (air=1): 2.49 SPECIFIC GRAVITY: Not applicable DENSITY: 3.214 g/L @ 0 C WATER SOLUBILITY: 1.46% @ 0 C PH: Not applicable VOLATILITY: Not applicable ODOR THRESHOLD: 0.01 ppm EVAPORATION RATE: Not applicable VISCOSITY: 0.01327 cP @ 20 C COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable SOLVENT SOLUBILITY: Soluble: alkali	5.1	<b>DOs :</b> ✓ Give large amounts of water or milk. ✓ Allow vomiting to occur. When vomiting occurs, keep head lower than hips to prevent aspiration. ✓ If person is unconscious, turn head to side. Get medical attention immediately <b>e) Fire Fighting Measures:</b> ✓ Evacuate personnel to a safe area. Wear self-contained breathing apparatus (SCBA) and full protective equipment. ✓ Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks.
3	Toxicology Information / Hazard identification	<b>TOXICITY DATA:</b> 293 ppm/1 hour(s) inhalation-rat LC50 <b>CARCINOGEN STATUS:</b> ACGIH: A4 -Not Classifiable as a Human Carcinogen <b>LOCAL EFFECTS:</b> Corrosive: inhalation, skin, eye <b>ACUTE TOXICITY LEVEL:</b> Toxic: inhalation <b>MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:</b> heart problems  Burns, chest pain, difficulty breathing, headache, dizziness, hyperactivity, emotional disturbances, bluish skin color, lung damage, death Harmful if inhaled, respiratory tract burns, skin burns, eye burns Containers may rupture or explode if exposed to heat. May ignite combustibles. Negligible fire hazard. Oxidizer. May ignite or explode on contact with combustible materials.	5.2	<b>DON'TS</b> ✓ Eye Contact: Do NOT allow victim to rub or keep eyes closed. ✓ Ingestion: Do NOT induce vomiting. ✓ Never give anything by mouth to an unconscious person ✓ Never make an unconscious person vomit or drink fluids. <b>Fire Fighting Measures:</b> ✓ Do not allow product to evaporate to dryness. ✓ Do not use dry chemicals, carbon dioxide or halogenated extinguishing agents. ✓ Large fires: Flood with fine water spray. ✓ Storage: Do not store near combustible materials.
4	Safety Measures (Preventive) :	Use PPE while handling the chemical. Use with adequate ventilation. Make eye bath and emergency shower available.		

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JK PAPER MILLS  
JAYKAYPUR  
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DEPARTMENT : Pulp Mill

DATE : 21.01.14

Date :

Sl No.	Particulars	Details	Sl No.	Dos & Don'ts
1.1	Substance / Name of Chemical	<b>Chlorine Dioxide</b>		<b>Dos :</b> ✓ Avoid all unnecessary exposure. ✓ Use Gas mask, safety goggles and safety gloves when dealing with spills. ✓ Use a gas mask if there is any risk of chlorine dioxide in the air. ✓ Spills of chlorine dioxide solutions should be diluted to a low concentration using copious amounts of water. ✓ Skin Contact: Take off contaminated clothing. ✓ Rinse skin immediately with plenty of water for 15-20 minutes. ✓ Call a poison control center or doctor for further treatment advice. ✓ Eye Contact: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses. ✓ Inhalation: Move the affected person to fresh air. ✓ Ingestion: Have person sip a glass of water only if victim is conscious. ✓ Fire Fighting Measures: Use water as extinguisher. Wear self-contained breathing apparatus (SCBA) and full protective equipment. ✓ Storage: Wash thoroughly after handling. Keep away from heat, sparks & flame. ✓ Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances. ✓ Store protected from light. Keep away from alkalies, oxidizable materials, finely divided metals, alcohols and permanganates. ✓ Store below 35°C. Store only in light-resistant containers fitted with a safety vent.  <b>Don'ts :</b> • Don't contact with the chemicals / substances. • Don't inhale and avoid skin and eye contact. • Don't contact chlorine dioxide solution with sources of ignition or heat. • Do not induce vomiting in case of ingestion.
1.2	Composition / Ingredients	Chlorine Dioxide , water		
2	Physical & Chemical Properties	Appearance and odour: Yellowish green to orange gas with a strong, pungent smell at room temperature, weak green colour in aqueous solution pH in solution: 2-3 at 8 g/l Freezing point (1 atm): -59°C Boiling point (1 atm): 11°C Flash point: Not applicable Explosion range: >12% in air Relative gas density: 2.4 (air = 1) Density (0°C): 1.54 kg/dm <sup>3</sup> Solubility in water: 8 g/l at 15°C		
3	Toxicology Information / Hazard identification	Harmful if swallowed. Chlorine dioxide gas is highly toxic. Chlorine dioxide gas is toxic and explosive at concentrations of more than 12% in air. Acute toxicity: LD50 (orally, rat) = 39-113 mg/kg Chlorine dioxide is a reacting and oxidising gas, which oxidises haemoglobin in the blood to methaemoglobin. This leads to a lack of oxygen in body tissue since methaemoglobin does not have the same ability to transport oxygen. Acute over-exposure can cause bronchitis, pneumonia and pulmonary oedema. Irritation of the mucous membranes. Eye and skin irritant. Chronic exposure may lead to lung damage and damage to the teeth.	5	
4	Safety Measures (Preventive) :	Use PPE while handling the chemical. Remove contaminated clothes and wash before reuse. Use with adequate ventilation. Make eye bath and emergency shower available.		

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**JK PAPER MILLS  
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DEPARTMENT : PULP MILL

SI No.	Particulars	Details	SI No.	Dos & Don'ts
1.1	Substance / Name of Chemical	SULPHUR DIOXIDE (CAS NO.7446-09-5)	5.1	Dos : - Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician. - In case of contact, immediately flush affected areas with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash clothing before reuse. Discard contaminated shoes -Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately. -All industrial PPE's must be use while handling this material.
1.2	Composition / Ingredients	Reacts with water to produce toxic and corrosive fumes, reproductieve effects		
2	Physical & Chemical Properties	Physical state: Gas Colour: Colour less Odour: Sharp pungent Relative density: 1.5 Density: 1.39 g/cm <sup>3</sup> (at 20 °C) Boiling point -10.0 °C, Freezing -75.5 °C Vapour pressure: @35°C, 2538 mm of Hg at 21.1°C, Molecular mass: 64 g/mol Vapor pressure: 330 kPa Critical pressure: 7884 kPa		
3	Toxicology Information / Hazard identification	CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED, CAUSES SEVERE SKIN BURNS AND EYE DAMAGE, TOXIC IF INHALED, CORROSIVE TO THE RESPIRATORY TRACT ACGIH TLV-STEL (ppm): 0.25 ppm OSHA PEL (TWA) (mg/m <sup>3</sup> ): 13 mg/m <sup>3</sup> OSHA PEL (TWA) (ppm): 5 ppm US IDLH (ppm): 100 ppm		
4	Safety Measures (Preventive)	Provide readily accessible eye wash stations and safety showers. Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).	5.2	Don'ts -Donot kept the cylinder and storage tank on heat exposition condition. -Donot expose for long period of time it may cause fatal. -Donot place the material on closed room. -Do not get liquid or vapor in eyes, on skin, or on clothing. -Do not attempt to dispose of residual or unused quantities. -Do not open valve until connected to equipment prepared for use

JK PAPER MILLS  
JAYKAYPUR  
MATERIAL SAFETY DATA SHEET

DEPARTMENT : Pulp Mill

Date : DATE : 21.01.14

SI No.	Particulars	Details	SI No.	Do's & Don'ts
1.1	Substance / Name of Chemical	Hydrogen peroxide		<p><b>Do's :</b></p> <ul style="list-style-type: none"> <li>• Skin Contact: Flush skin with plenty of soap and water for at least 15 minutes - Remove contaminated clothing and shoes. Wash clothing before reuse.</li> <li>• Destroy contaminated shoes.</li> <li>• Eye Contact: Extensive irrigation with water is required (at least 30 minutes).</li> <li>• Inhalation: Remove the victim from exposure to fresh air immediately.</li> <li>• If breathing is difficult, give oxygen, apply artificial respiration using organ.</li> <li>• Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water.</li> <li>• If vomiting occurs &amp; victim is conscious, give water to dilute the chemical.</li> <li>• Fire Fighting Measures: Evacuate personnel to a safe area.</li> <li>• Wear self-contained breathing apparatus (SCBA) and full mask.</li> <li>• Use water only! Cool containers with flooding water.</li> <li>• Storage: Wash thoroughly after handling.</li> <li>• Keep away from heat, sparks &amp; flame. Keep container closed.</li> <li>• Store in a cool, dry, well-ventilated area away from incompatible substances. • Store protected from light. Keep away from alkalies, oxidizable materials, finely divided metals, alcohols, and permanganates.</li> <li>• Store below 25°C. Store only in light-resistant containers with a safety vent.</li> <li>• Absorb spill with inert material (e.g., dry sand or earth), then place into a chemical waste container.</li> </ul>
1.2	Composition / Ingredients	Hydrogen peroxide, water		
2	Physical & Chemical Properties	<p>Physical State: Liquid Appearance: clear, colorless Odor: slight acid odor pH: 3.3 (30% solution) Vapor Pressure: 23 mm Hg @ 30C Vapor Density: 1.10 Evaporation Rate: &gt;1.0 (Butyl acetate=1) Viscosity: 1.25 cP Boiling Point: 108 deg C @ 760 mmHg Freezing/Melting Point: -23 deg C Decomposition Temperature: Not available. Solubility: Miscible in water. Specific Gravity/Density: 1.1-1.2 (30-50%) Molecular Formula:H<sub>2</sub>O<sub>2</sub> Molecular Weight:34.0128 Vapors may be heavier than air. Explosion Limits: Lower:40 vol %, Upper: 100 vol %</p>	5.1	
3	Toxicology Information / Hazard Identification	<p>RTECS: CAS# 7722-84-1; MX0887000; MX0888000; MX0890000; MX0895000; MX0900000. CAS# 7732-18-5; ZC0110000</p> <p>LD50/LC50: CAS# 7722-84-1: Draize test, rabbit, eye: 1 mg Severe; Inhalation, rat: LC50 = 2 gm/m<sup>3</sup>/4h; Inhalation, rat: LC50 = 2000 mg/m<sup>3</sup>; Oral, mouse: LD50 = 2000 mg/kg; Oral, rabbit: LD50 = 420 mg/kg; Oral, rat: LD50 = 1518 mg/kg; Oral, rat: LD50 = 916 mg/kg; Oral, rat: LD50 = 376 mg/kg; Oral, rat: LD50 = 4950 mg/kg; Skin, rat: LD50 = 3 gm; Skin, rat: LD50 = 4460 mg/kg; -BR. CAS# 7732-18-5: Oral, rat: LD50 = &gt;80 mL/kg; -BR.</p> <p>Carcinogenicity: CAS# 7722-84-1: ACGIH: A3 - Animal Carcinogen IARC: IARC Group 3 - not classifiable CAS# 7732-18-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.</p> <p>Epidemiology: No information available. Teratogenicity: No information available. Reproductive Effects: No information available. Neurotoxicity: No information available. Mutagenicity: CAS# 7722-84-1: Mutation in Microorganisms: Salmonella typhimurium = 100 ug/plate.; Hyman, embryo = 50 umol/L.; Cytogenetic Analysis: Human, embryo = 20 umol/L. Mutation in Mammalian Somatic Cells: Hamster, lung = 1mmol/L.</p> <p>Other Studies: No data available  <span style="float: right;">Danger! Strong oxidizer. Contact with other</span>                      material may cause a fire. Eye contact may result in permanent eye damage. May cause central nervous system effects. Causes eye and skin irritation and possible burns. Corrosive. May cause severe respiratory tract irritation with possible burns. May cause severe digestive tract irritation with possible burns. Light sensitive. May be harmful if swallowed. May cause blood abnormalities.                      Target Organs: Blood, central nervous system.                      Water runoff can cause environmental damage.                      Contact with combustible materials may cause a fire.                      During a fire, irritating and highly toxic gases may be generated</p>	5.2	<p><b>Don'ts</b></p> <ul style="list-style-type: none"> <li>• Eye Contact: Do NOT allow victim to rub or keep eyes closed.</li> <li>• Inhalation: Do NOT use mouth-to-mouth resuscitation.</li> <li>• Ingestion: Do NOT induce vomiting.</li> <li>• Never give anything by mouth to an unconscious person.</li> <li>• Fire Fighting Measures: Do NOT use carbon dioxide. Do NOT use DCP.</li> <li>• Do NOT get water inside containers.</li> <li>• Storage: Do not store near combustible materials.</li> <li>• Do not use combustible materials such as saw dust to absorb spill.</li> <li>• Do not get water inside containers.</li> </ul>
4	Safety Measures (Preventive) : Antidote :	<p>Use PPE while handling the chemical. Remove contaminated clothes and wash before reuse. Use with adequate ventilation. Make eye bath and emergency shower available.</p>		

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DATE : 21.01.14

DEPARTMENT : NEW FIBER LINE

Particulars		Details		Date :	
1.1	Substance / Name of Chemical	Sodium Hydroxide		5.1	<b>Do's :</b> • Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes. • Remove contaminated clothing and shoes. Wash clothing before reuse. • Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. • Get medical attention immediately. • Inhalation: Remove to fresh air. If not breathing, give artificial respiration. Perform CPR if necessary. Call a physician. • Ingestion: Give large quantities of water or milk if available. Get medical attention immediately. <b>Fire Fighting Measures:</b> Evacuate personnel to a safe area. • Wear self-contained breathing apparatus (SCBA) and full protective equipment. • If chlorine dioxide gas is produced, vent to atmosphere. Open or vent any large containers. <b>Storage:</b> Wash thoroughly after handling. Keep away from heat, sparks, and flame. • Keep container closed when not in use. Store in a cool, dry, well-ventilated area. • Store below 35°C. Store only in light-resistant containers fitted with a safety vent.
1.2	Composition / Ingredients	Sodium Hydroxide, water			
2	Physical & Chemical Properties	Physical state and appearance: Liquid. Odor: Odorless. Taste: Alkaline, Bitter, (Strong). Molecular Weight: Not applicable. Color: Clear Colorless. pH (1% solution): Basic. Boiling Point: The lowest known value is 100°C (212°F) (Water). Melting Point: Not available. Critical Temperature: Not available.p. 4 Specific Gravity: Weighted average: 1.06 (Water = 1) Vapor Pressure: The highest known value is 2.3 kPa (@ 20°C) (Water). Vapor Density: The highest known value is 0.62 (Air = 1) (Water). Volatility: Not available. Odor Threshold: Not available. Water/Oil Dist. Coeff.: Not available. Ionicy (in Water): Not available. Dispersion Properties: See solubility in water. Solubility: Easily soluble in cold water.		5.2	<b>Don'ts</b> • Eye Contact: Do NOT allow victim to rub or keep eyes closed. • Ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person • Fire Fighting Measures: Do not allow product to evaporate to dryness. • Storage: Do not store near combustible materials.
3	Toxicology Information / Hazard Identification	<b>POISON! DANGER! CORROSIVE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. CAUSES BURNS TO ANY AREA OF CONTACT. REACTS WITH WATER, ACIDS AND OTHER MATERIALS.</b> Sodium hydroxide/ Irritation data: skin, rabbit: 500 mg/24H severe; eye rabbit: 50 ug/24H severe. Investigated as a mutagen. Inhalation: Severe irritant, damage of the upper respiratory tract. Symptoms may include sneezing, sore throat or runny nose. Severe pneumonitis may occur. Ingestion: Corrosive! Cause severe burns of mouth, throat, and stomach. Severe scarring of tissue and death may result. Symptoms may include bleeding, vomiting, diarrhea, fall in blood pressure. Damage may appear days after exposure. Skin Contact: Corrosive! Cause irritation or severe burns and scarring with greater exposures. Eye Contact: Corrosive! Causes irritation of eyes, and with greater exposures it can cause burns that may result in permanent impairment of vision, even blindness. Chronic Exposure: Destructive effect upon tissue			
4	Safety Measures (Preventive) : Antidote :	Use PPE while handling the chemical. Remove contaminated clothes and wash before reuse. Use with adequate ventilation. Make eye bath and emergency shower available.			

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		Date :	
SI No.	Particulars	Details	SI No. Dos & Don'ts
1.1	Substance / Name of Chemical	Sulphuric Acid	Dos : • Skin Contact: Immediately flush with large amount of water for at least 15 minutes. • Eye Contact: Immediately flush with large amount of water for at least 15 minutes, holding lids apart. • Inhalation: Remove patient from exposure to fresh air. Administer approved oxygen supply if breathing is difficult. • Ingestion: If victim is conscious give 2-4 cupfuls of milk or water. • Fire Fighting Measures: Use PPE, wear a self contained breathing apparatus to avoid contact with thermal decomposition product. • Storage: keep container closed when not in use.
1.2	Composition / Ingredients	Sulphuric Acid, Water	
2	Physical & Chemical Properties	Physical State: Liquid Appearance: colorless Odor: odorless pH: 0.3 (1N Solution) Vapor Pressure: <0.00120 mm Hg Vapor Density: 1.2 kg/m <sup>3</sup> Evaporation Rate: Slower than ether. Viscosity: Negligible. Boiling Point: 554°F Freezing/Melting Point: 50.6°F Decomposition Temperature: 340°C Solubility: Soluble in water and ethanol. Specific Gravity/Density: 1.841 Molecular Formula: H <sub>2</sub> SO <sub>4</sub> Molecular Weight: 98.0716	5.1
3	Toxicology Information / Hazard identification	RTECS: CAS# 7664-93-9: W55600000. LD50/LC50: CAS# 7664-93-9 Inhalation, mouse: LC50 = 320 mg/m <sup>3</sup> /2H. Inhalation, rat: LC50 = 51- mg/m <sup>3</sup> /2H. Oral, rat: LD50 = 2140 mg/kg. Carcinogenicity: CAS# 7664-93-9: Not listed. California: Not listed. NIOSH: Not listed. NTP: Not listed. OSHA: Select carcinogen. IARC: Group 1 carcinogen. Epidemiology: Workers exposed to industrial sulfuric acid mist showed a statistical increase in laryngeal, nasal, sinus and lung cancer. These data suggests a possible relationship between carcinogenesis and inhalation of sulfuric acid mist. Teratogenicity: No information available. Reproductive: No information available. Mutagenicity: No information available. Neurotoxicity: No information available Contact with many organic and inorganic chemicals may cause fire or explosion. Contact with metals liberates flammable hydrogen gas. Reacts violently with water. VERY TOXIC. May be fatal if inhaled or swallowed. CORROSIVE to the eyes, skin and respiratory tract. May cause blindness and permanent scarring. Causes lung injury—effects may be delayed. Strong inorganic acid mists containing sulfuric acid are CARCINOGENIC. Target Organs: Lungs, teeth, eyes, skin, mucous membranes.	5.2
4	Safety Measures	Use PPE while handling the chemical. Remove contaminated clothes and wash before reuse. Use with adequate ventilation. Make eye bath and emergency shower available.	

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JK PAPER MILLS  
JAYKAYPUR  
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Date :

SI No	Particulars	Details	SI No	Dos & Don'ts
1.1	Substance / Name of Chemical	Hydrochloric Acid		
1.2	Composition / Ingredients	Hydrochloric Acid, water		
2	Physical & Chemical Properties	<p>Appearance: Clear, colorless to slight yellow liquid            Physical state: Liquid            Odor: Acidic            Odor Threshold: 0.25 to 10 ppm            Specific Gravity: 1.1800            pH: 1            Melting Point/Freezing Point: -46°C (-51°F)            Boiling Point/Range: 51°C (123°F)            Flammability: Not Flammable (See section 5)            Flash point: Not Flammable (See section 5)            Evaporation Rate (Butyl Acetate = 1): Not Available            Explosive Limits: Not Explosive (See section 5)            Vapor Pressure (at 20°C): 15 mmHg            Vapor Density (air = 1): 1.267            Solubility: Completely soluble in water            Partition coefficient/n-octanol/water: Not Available            % Volatile: Not Available            Autoignition Temperature: See section 5            Material can react with metals to produce flammable hydrogen gas.            Emits toxic fumes under fire conditions</p>	5.1	<p><b>Dos :</b></p> <ul style="list-style-type: none"> <li>• Skin Contact: Flush with plenty of water for at least 15 minutes.</li> <li>• Removing contaminated clothing and shoes and wash using soap.</li> <li>• Cover the irritated skin with an emollient. Cold water may be used.</li> <li>• Wash clothing before reuse.</li> <li>• Eye Contact: rinse with plenty of water for 15 minutes and seek medical attention.</li> <li>• Cold water may be used. Get medical attention immediately.</li> <li>• Inhalation: Move casualty to fresh air and keep at rest. Get medical attention.</li> <li>• Ingestion: Wash out mouth with water and give a glass of water or milk.</li> <li>• Fire Fighting Measures: Evacuate personnel to a safe area.</li> <li>• Wear self-contained breathing apparatus (SCBA) and full protective equipment.</li> <li>• Storage: Wash thoroughly after handling. Keep away from heat, sparks, and flame.</li> <li>• Keep container closed when not in use.</li> <li>• Store in a cool, dry, well-ventilated area away from incompatible substances.</li> </ul>
3	Toxicology Information / Hazard identification	<p><b>Lowest Published Lethal Doses (LDL/LCL)</b>            LDL [Man] Oral: 2857 ug/kg            LCL [Human] - Route: Inhalation; Dose: 1300 ppm/30M            LCL [Rabbit] - Route: Inhalation; Dose: 4413 ppm/30M            LD50 [oral, rat]; 700 mg/kg            LC50 [rat]; 5124 (1 hour)            liver, bleeding of nose and gums, nasal and oral mucosal ulceration, conjunctivitis, yellowing of teeth and erosion of tooth enamel, dermatitis.</p> <p style="text-align: center;"><b>May affect</b></p> <p>Teratogenicity: Not Available            Mutagenicity: Not Available            Embryotoxicity: Not Available            Synergistic Products/Effects: Not Available            Causes severe burns.            Target organs: Kidney, liver, mucous membranes, respiratory system, skin, eyes and cardiovascular system.</p>	5.2	<p><b>Don'ts</b></p> <ul style="list-style-type: none"> <li>• Do not ingest. Do not breathe gas/fumes/ vapor/spray. Never add water to this product.</li> <li>• Ingestion: Do NOT induce vomiting.</li> <li>• Never give anything by mouth to an unconscious person</li> <li>• Storage: Do not store near combustible materials.</li> </ul>
4	Safety Measures (Preventive) : Antidote :	<p>Provide local exhaust, preferably mechanical.            Use an approved respirator with acid vapor cartridges.            Wear chemical safety glasses with a face shield for splash protection.            Wear neoprene or rubber gloves, apron and other protective clothing.            Remove contaminated clothes and wash before reuse. Use with adequate ventilation.            Make eye bath and emergency shower available.</p>		

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DEPARTMENT : DEPARTMENT: SODA RECOVERY

DATE : 21.01.14

SI No	Particulars	Details	SI No	Dos & Don'ts
1.1	Substance / Name of Chemical	METHANOL (CH3OH)		
1.2	Composition / Ingredients	Methanol -80 % , Water -20% CHEMICAL FAMILY: Alcohols		
2	Physical & Chemical Properties	APPEARANCE: Clear, colorless liquid. ODOR: Alcohol odor PHYSICAL STATE: Liquid. VAPOR PRESSURE: (at 20oc ) 96 mmhg VAPOR DENSITY: (air = 1) 1.11 MELTING POINT: -97.6oc BOILING POINT: (at 760 mmhg) 64.5°C SPECIFIC GRAVITY: (water = 1) 0.7915 at 68°F SOLVENT SOLUBILITY: Solubility in alcohols, ketones, Esters, and halogenated hydrocarbons	5.1	<p><b>DOS</b></p> <ul style="list-style-type: none"> <li>• Store containers in well-ventilated place.</li> <li>• storage to be remote from inhabited buildings.</li> <li>• Keep away from all sources of ignition.</li> <li>• Maintain the storage tank cool.</li> <li>• Wear chemical goggles or face shield, supplied-air or self-contained breathing apparatus, rubber gloves, aprons and boots.</li> <li>• In case of eye contact, remove the victim from contaminated source and clean with shower.</li> <li>• Gently rinse the affected eye(s) with clean, lukewarm water for at least 15 minutes.</li> <li>• Wash the affected skin with tepid water.</li> <li>• Soap and water should be available to clean skin.</li> <li>• Wash thoroughly prior to consuming food.</li> <li>• Recycling/reuse of all methanol residuals.</li> <li>• Consider discarded or spill cleanup material as hazardous waste.</li> <li>• Seek medical attention immediately in case of inhalation or ingestion.</li> <li>• Use dry chemical alcohol foam or carbon dioxide type fire extinguisher for firefighting.</li> <li>• Use water to cool adjacent containers.</li> <li>• Use SCBA while firefighting.</li> <li>• If spill is small use absorbent material to soak up spill.</li> </ul>
3	Toxicology Information / Hazard identification	Inhalation vapor daily results illness. Gastrointestinal irritation; slight irritation of nose and eyes; head feels hot, headache; mental confusion and visual disturbance; tiredness. Ingestion of methanol may cause acidosis, headache, visual disturbances, dizziness, nausea and vomiting, severe upper abdominal pain, dilated nonreactive pupils and death. Skin exposure may cause irritation and dermatitis. Methanol can seriously impair vision. Flammable, Flash Point-54° F Auto ignition point-725° F (385°C) It burns with clean, clear flame being almost invisible in daylight.	5.2	<p><b>DON'TS</b></p> <ul style="list-style-type: none"> <li>• Don't get exposed to methanol vapor repeatedly.</li> <li>• Do not use any of the chemical on your skin or clothing in case of skin contact.</li> <li>• Do not allow methanol enter into sewers, drains, or waterways.</li> <li>• Do not perform hot work at methanol plant without permission.</li> </ul>
4	Safety Measures (Preventive) :  Antidote :	Provide adequate ventilation. Wear chemical goggles or face shield, supplied-air or self-contained breathing apparatus, rubber gloves, aprons and boots. Soap and water should be available to clean contaminated skin. Wash thoroughly prior to consuming food or beverage, smoking, or using restroom facilities.		

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JK PAPER MILLS  
JAYKAYPUR  
MATERIAL SAFETY DATA SHEET

Date :

SI No.	Particulars	Details	SI No.	Dos & Don'ts
1.1	Substance / Name of Chemical	<b>FURNACE OIL</b>		
1.2	Composition / Ingredients	Complex mixture of hydrocarbons		
2	Physical & Chemical Properties	Physical State : Liquid @ 150C & 1 atm Appearance and Odor : Brownish to black Vapor Pressure : 0.1 psi at 38 °C Specific Gravity : 0.95 to 0.98 gm / cc at 15 °C Water Solubility : Insoluble Boiling Point : Data not available Freezing Point : 27 °C Vapour Density : Heavier than air (Air = 1) Flash Point : > 66 °C Auto ignition Temperature : 220 to 250 °C LEL : 1.0 % , UEL : 5.0 % Flammability Classification : Flammable Reacts vigorously with oxidising materials.	5.1	<b>Dos:-</b> ✓ Eyes : Flush with water for 15 min. Get medical attention. ✓ Skin : Wash with warm water & soap. ✓ Inhalation : Remove to fresh air. Consult a physician if irritation persists. ✓ Use PPE's. Avoid contact with skin and eyes. Wash thoroughly after handling ✓ Dispose off Sludge through Bio-remediation or incineration.
3	Toxicology Information / Hazard Identification	*TLV as per AICIGH : 5 mg / m3 as mineral oil mist Non - Toxic/Flammable Substance Unusual Fire or Explosion Heat produces vapours and can cause rupture of containers. Hazards : Tanks head space can have light hydrocarbons. Flashback may occur along vapour trail Can burn with lot of heat producing CO2 and CO. Primary Entry Routes : Skin, eyes and ingestion Acute Effects : Skin: skin dry, erythema, oil acne, and oil folliculitis. skin cancer, Skin cracking & contact dermatitis, burns. Eye irritant: Eye Contact: Light to moderate irritation. Carcinogenicity : Not listed as carcinogenic	5.2	<b>Don'ts</b> ✓ Do not induce vomiting. It may lead to chemical pneumonitis. ✓ Do not use/store near heat/open flame. ✓ Handling Precautions : Do not use/store near heat/open flame. ✓ Storage Requirements : Do not use/store near heat/open flame/water/acids
4	Safety Measures - Fire Fighting Measures	Extinguishing Media : Foam, Dry Chemical Powder, CO2 Unusual Fire or Explosion : Heat produces vapours, cause rupture of containers. Hazards : Tanks head space can have light hydrocarbons. Flashback may occur along vapour trail Hazardous Combustion : Carbon di oxide, carbon mono oxide Fire-Fighting Instructions : Small fires extinguish by handheld extinguisher. Major fire may require withdrawal and allowing the tanks to burn.		
5	Safety Measures (Exposure Controls / Personal Protection)	Engineering Controls : Provide proper ventilation for environment. Respiratory Protection : Use respiratory protection if ventilation is improper Protective Clothing / Equipment : Use face shield, PVC gloves, safety boots while handling. Contaminated clothing to be immediately removed Use PPE's. Avoid contact with skin and eyes. Wash thoroughly after handling		

1/3