

## **Bleaching of Pulp**

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20.3.9.4 Insulation

20.3.9.5 Containment

20.3.9.6 Pumps

20.3.9.7 Lubricants

20.3.9.8 Piping

20.3.9.9 Pressure Relief Valves

20.3.9.10 Materials of Construction

20.4 Oxygen (O<sub>2</sub>)

20.4.1 Definition and Properties

20.4.2 Health and Safety Hazards

20.4.2.1 Major Hazards

20.4.2.2 Eye

20.4.2.3 Skin

20.4.2.4 Inhalation

20.4.2.5 Ingestion

20.4.2.6 Chronic Effects

20.4.2.7 Fire and Explosion

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20.4.3 Warning Properties

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20.4.9.7 Materials of Construction

20.5 Sodium Chlorate ( $\text{NaClO}_3$ )

20.5.1 Definition and Properties

## **20.5.2 Health and Safety Hazards of Sodium Chlorate**

### **20.5.2.1 Major Hazards**

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#### **20.5.2.3 Skin**

#### **20.5.2.4 Inhalation (of Dust or Mist)**

#### **20.5.2.5 Ingestion**

#### **20.5.2.6 Chronic Effects**

#### **20.5.2.7 Fire and Explosion**

#### **20.5.2.8 Other Hazards**

## **20.5.3 Warning Properties**

### **20.5.4 Personal Protective Equipment**

### **20.5.5 Safety Equipment**

### **20.5.6 Handling Spills and Leaks**

### **20.5.7 Housekeeping and Routine Maintenance**

### **20.5.8 Unloading Considerations**

## **20.5.9 Design Considerations for Storage and Handling**

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20.5.9.8 Water Heaters

20.5.9.9 Insulation

20.5.9.10 Materials of Construction

## 20.6 Methanol (CH<sub>3</sub>OH)

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20.6.2.1 Major Hazards

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20.6.2.3 Skin

20.6.2.4 Inhalation

20.6.2.5 Ingestion

20.6.2.6 Chronic Effects

20.6.2.7 Fire and Explosion

20.6.2.8 Other Hazards

20.6.3 Warning Properties

20.6.4 Personal Protective Equipment

20.6.5 Safety Equipment

20.6.6 Handling Spills and Leaks

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## 20.6.8 Unloading Considerations

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### 20.6.9.4 Containment

### 20.6.9.5 Electrical Equipment

### 20.6.9.6 Static Electricity

### 20.6.9.7 Piping

### 20.6.9.8 Materials of Construction

## 20.7 Sodium Hydroxide (NaOH)

### 20.7.1 Definition and Properties

### 20.7.2 Health and Safety Hazards

#### 20.7.2.1 Major Hazards

#### 20.7.2.2 Eye

#### 20.7.2.3 Skin

#### 20.7.2.4 Inhalation

#### 20.7.2.5 Ingestion

#### 20.7.2.6 Chronic Effects

#### 20.7.2.7 Fire and Explosion

#### 20.7.2.8 Other Hazards

20.7.3 Warning Properties

20.7.4 Personal Protective Equipment

20.7.5 Safety Equipment

20.7.6 Handling Spills and Leaks

20.7.7 Housekeeping and Routine Maintenance

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20.7.9 Design Considerations for Storage and Handling

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    20.7.9.2 Location

    20.7.9.3 Storage Tanks

    20.7.9.4 Containment

    20.7.9.5 Pumps

    20.7.9.6 Piping

    20.7.9.7 Materials of Construction

20.8 Sulfuric Acid ( $\text{H}_2\text{SO}_4$ )

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    20.8.2.1 Major Hazards

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        20.8.2.3 Skin

        20.8.2.4 Inhalation

20.8.2.5 Ingestion

20.8.2.6 Chronic Effects

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20.8.2.8 Other Hazards

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20.8.4 Personal Protective Equipment

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20.8.7 Housekeeping and Routine Maintenance

20.8.8 Unloading Considerations

20.8.8.1. Railcars

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20.8.9.7 Flexible Hoses

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## 20.8.9.9 Materials of Construction

### 20.9 Ozone (O<sub>3</sub>)

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#### 20.9.2 Health and Safety Hazards

##### 20.9.2.1 Major Hazards

##### 20.9.2.2 Eye

##### 20.9.2.3 Skin

##### 20.9.2.4 Inhalation

##### 20.9.2.5 Ingestion

##### 20.9.2.6 Chronic Effects

##### 20.9.2.7 Fire and Explosion

##### 20.9.2.8 Other Hazards

### 20.9.3 Warning Properties

### 20.9.4 Personal Protective Equipment

### 20.9.5 Safety Equipment

### 20.9.6 Handling Spills and Leaks

### 20.9.7 Housekeeping and Routine Maintenance

### 20.9.8 Unloading Considerations

### 20.9.9 Design Considerations for Storage and Handling

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#### 20.9.9.2 Location

20.9.9.3 Storage Tanks

20.9.9.4 Containment

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20.10.3 Respirator Descriptions

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20.11 Labels and Classifications

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