



## MATERIAL SAFETY DATA SHEET

Prepared September 2013 and Reviewed August 2015 by Macjames Global Resources Limited. Factory: Plot 2 Obong Udo Akpan Udo Estate, Umuebullu II, Etche LGA, Rivers State, Nigeria.

### SECTION 1: CHEMICAL PRODUCT AND COMPANY INFORMATION

#### PRODUCT NAME: Macjames® Descaler/Scale Cleaner - MDSC-12

**PRODUCT USE:** Dissolving/removal of heavy and light scales, limescale, mud, rust deposits, etc, from pipelines, water-operated equipment and others with like deposits.

**APPROVED BY DPR:** DPR/LAB/7302.5/Vol.4/24

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**PACKAGING AND NUMBER CODES:** 4Ltr- MDSC-12A: 20Ltr- MDSC-12B:  
25Ltr- MDSC-12C: 200Ltr- MDSC-12D.

### SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

**INGREDIENTS :** De-ionized water, Phosphoric acid, inhibited aqueous Hydrogen Chloride, and Ammonium-based corrosion inhibitor.

### SECTION 3: HAZARDOUS INGREDIENTS/ IDENTIFICATION

Material or Component	CAS No.	NIOSH TWA (mg/m <sup>3</sup> )
Hydrogen Chloride, Aqueous	7647-01-0	7
Phosphoric acid	7664-38-2	3

TWA: Time Weighted Average over 8 hours of work.

### SECTION 4: FIRST AID MEASURES

**EYES:** If exposed, flush with water for 20 minutes and get medical attention.  
**SKIN:** Wash with plenty of water. Seek medical attention if irritation persists.  
**INHALATION:** Material has little vapor pressure and no noxious fumes in pure state. Get fresh air if exposed and seek medical attention if condition does not improve.  
**INGESTION:** If ingested, drink water or milk, and seek immediate medical attention. Do not induce vomiting.



### SECTION 5: FIRE FIGHTING METHODS

**MacJames® Descaler/Scale Cleaner - MDSC-12** is a non-combustible liquid.

**Fire and Explosion Hazards:** There is little risk of an explosion from this product if commercial quantities are involved in a fire.

This product is likely to decompose only after heating to dryness, followed by further strong heating. Fire decomposition products from this product are likely to be harmful if inhaled. Take suitable protective measures.

**Extinguishing Media:** Not combustible. Use extinguishing media suited to burning materials. Water fog or fine spray will control, as will CO<sub>2</sub> and dry chemicals.

**Fire Fighting:** There is little danger of a violent reaction or explosion if significant quantities of this product are involved in a fire. Recommended personal protective equipment is liquid-tight chemical protective clothing and breathing apparatus.

**Flash point:** Does not burn.

**Upper Flammability Limit:** Does not burn.

**Lower Flammability Limit:** Does not burn.

**Auto ignition temperature:** Not applicable - does not burn.

**Flammability Class:** Does not burn. Fire fighters should wear self contained breathing apparatus with full face masks. Use dry chemical, foam, carbon dioxide or water spray for fires involving this product.

### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Protection:** It is a good practice to wear impermeable gloves when handling chemical products. Eye protective safety glasses with side shields are recommended. Area isolation is necessary to personnel without protection.

**Control Procedures:** Rinse area with copious amounts of water to dilute. Sodium bicarbonate may also be used to absorb and/or neutralize liquid. Material is fully biodegradable and may be disposed of down normal sewer system, with water flush in accordance with the local, State, Provincial, and Federal regulations for your location.

### SECTION 7: HANDLING AND STORAGE

**Handling:** Wear appropriate PPE for chemical handling. Avoid contact or contamination of product with incompatible materials such as strong Bases or Amines.

**Storage:** Preserve integrity of container. The product should be stored in the original containers in a cool and dry location.

### SECTION 8: EXPOSURE CONTROLS/PERSONNEL PROTECTION

**Exposure:** Product has little vapor pressure and no noxious fumes in pure state.

Should not be considered hazardous when used as directed. Overexposure to chemicals should be avoided.



**Respiratory Protection:** Use under normal ventilated operating conditions, materials vapors and/or mists occur when in use so use of masks is recommended.

**Eye Protection:** Usage of safety glasses with side shields are recommended when handling product.

**Hand Protection:** Hand gloves are recommended when using product even though **Macjames® Descaler/Scale Cleaner - MDSC-12** can be held in the open hand without risk of burns.

**Controls (Ventilation):** Use normal exhaust, vent to atmosphere.

**Other Protective:** As recommended by plant safety department. Aprons or coveralls may be worn to prevent clothing from operational stains.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>State:</b>	Liquid
<b>Appearance:</b>	Colourless Liquid to cream colour.
<b>Odour Characteristics:</b>	Moderate acidic odour
<b>pH:</b>	< 2
<b>Viscosity:</b>	2.8P
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	1.15
<b>Boiling Point:</b>	>110°C
<b>Water Solubility:</b>	Completely soluble in water.
<b>Volatility:</b>	Not volatile (contains no VOCs)
<b>Evaporation Rate (H<sub>2</sub>O = 1):</b>	≥1
<b>Freezing Point:</b>	Below 0°C.
<b>Odour Threshold:</b>	No data
<b>Coeff. Oil/water Distribution:</b>	No data
<b>Autoignition temp:</b>	Not applicable - does not burn.

## SECTION 10: STABILITY AND REACTIVITY

**Stability:** **Macjames® Descaler/Scale Cleaner - MDSC-12** is considered stable.

**Hazardous Decomposition:** None in pure state.

**Polymerization:** Product will not undergo polymerization.

**Incompatibility:** Avoid contact with strong caustics/Bases or Amines.

## SECTION 11 : TOXICOLOGICAL AND ECOLOGICAL INFORMATION

**Macjames® Descaler/Scale Cleaner - MDSC-12** is known to be non-carcinogenic, non-mutagenic or non-toxic from ingredients found in it.

This product may affect aquatic plants and fish if released undiluted. It should be properly diluted/neutralised with water before being released into the environment according to regulations.



**SECTION 12: TRANSPORTATION AND DISPOSAL INFORMATION**

**Macjames® Descaler/Scale Cleaner - MDSC-12** is a non-combustible acidic Liquid. Should be transported in received containers. Empty used containers should be recycled at approved facility. Should be properly diluted with water before disposal or disposal should be conducted in accordance with local and Federal Environmental guidelines and regulations.

**SECTION 13: REGULATORY INFORMATION**

Chemical components found in this product are biodegradable and non-hazardous as in the proportions.

**SECTION 14: OTHER INFORMATION**

This MSDS contains only safety-related information.  
 Use **Macjames® Descaler/Scale Cleaner - MDSC-12** only as directed. If procedures are not published for your particular application, contact us for assistance. **Macjames® Descaler/Scale Cleaner- MDSC-12** manufactured to be used by itself or diluted with water and water only. Do not heat. Use at an ambient temperature. Vent circulating solution to atmosphere. Some reactions may occur with some alloys of aluminum, magnesium, and/or zinc.  
**Macjames® Descaler/Scale Cleaner - MDSC-12** contains corrosion inhibiting inert salt and removes scales by reaction.

**HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS) RATING.**

<b>HEALTH</b>	<b>1</b>	<b>0 - Minimal</b>
<b>FLAMMABILITY</b>	<b>0</b>	<b>1 - Slight</b>
<b>PHYSICAL HAZARD</b>	<b>0</b>	<b>2 - Moderate</b>
<b>PERSONAL PROTECTION</b>	<b>B</b>	<b>3 - High</b>
		<b>4 - Very High</b>

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