



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

MANUFACTURER: Macjames Global Resources Limited, Port Harcourt, Rivers State, Nigeria.
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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 ³)
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 CO₂ 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

State:	Liquid
Appearance:	Colourless Liquid to cream colour.
Odour Characteristics:	Moderate acidic odour
pH:	< 2
Viscosity:	2.8P
Specific Gravity (H₂O = 1):	1.15
Boiling Point:	>110°C
Water Solubility:	Completely soluble in water.
Volatility:	Not volatile (contains no VOCs)
Evaporation Rate (H₂O = 1):	≥1
Freezing Point:	Below 0°C.
Odour Threshold:	No data
Coeff. Oil/water Distribution:	No data
Autoignition temp:	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.

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

DISCLAIMER: This MSDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered by Macjames Global Resources Limited to be dependable and is accurate to the best of the Company's knowledge. It is not meant to be an all-inclusive document on worldwide hazard communication regulations. This information is offered in good faith. Each user of this material needs to evaluate the conditions of use and design the appropriate protective mechanisms to prevent employee exposures, property damage or release to the environment. Macjames Global Resources Limited assumes no responsibility for injury to the recipient or third persons, or for any damage to any property resulting from misuse of the product. No warranty, either expressed or implied, of merchantability, of fitness, or of any nature with respect to the product, or to the data, is made herein.

MINISTRY OF PETROLEUM RESOURCES

DEPARTMENT OF PETROLEUM RESOURCES

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P.M.B. No: 01-2790000

Ref. No: 11th September, 2014

Telephone:

Date:

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The Managing Director
MacJames Global Resources Limited
#37, Trans Amadi Industrial Layout
2nd Floor, Rumuobiakani
Port-Harcourt
Rivers State.

Dear Sir,

APPROVAL FOR THE USE OF MACJAMES DESCALER/SCALE CLEANER-MDSC-12 FOR USE IN THE NIGERIAN OIL AND GAS INDUSTRY

We acknowledge receipt of your letter of 2nd September, 2014 enclosing the MSDS for Macjames Descaler/Scale Cleaner-MDSC-12.

- Following the review of the MSDS of the product, we are pleased to convey our approval for the use of Macjames Descaler/Scale Cleaner-MDSC-12 in the Oil and Gas Industry.
- This approval is for a period of three (3) years in the first instance from the date of this letter and is subject to periodic review by the Department as deemed necessary.
- The use of Macjames Descaler/Scale Cleaner-MDSC-12 shall be governed by the provision of section 25 of the petroleum (Drilling and Production) Regulations, 1969 as well as Environmental Guidelines and Standards for the Petroleum Industry in Nigeria (EGASPIN 2002) which were both issued pursuant to section 9(1)(b)(iii) of Petroleum Act, 1969.
- Furthermore, any change in the composition or reformulation of this product affecting the data submitted should be promptly communicated to the Director of Petroleum Resources for the purpose of re-certification, as such changes automatically renders this approval invalid.
- Finally, this approval notwithstanding, the user of the product shall seek the approval of the DPR for the specific use under specified terms and condition and shall remain fully responsible for any damage done to the local environment on account of the use of the product.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Musa M. Zagi'.

Dr. Musa M. Zagi, spe, mei
For: Director of Petroleum Resources