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Exhibit 99.1

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RELEASE: IMMEDIATE

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MACROCHEM DISCONTINUES RESEARCH AND PRODUCT DEVELOPMENT ACTIVITIES, TERMINATES  
SUBSTANTIALLY ALL NON-MANAGEMENT PERSONNEL, WILL SEEK  
BUYER FOR COMPANY OR ITS ASSETS

SEPTEMBER 1, 2005, LEXINGTON, MA - At the direction of its board of directors, MacroChem Corporation (Nasdaq: MCHM) is discontinuing all research and product development activities. The Company will seek to sell the business or its assets. As previously announced, the Company has been evaluating strategic alternatives, such as raising additional capital or a merger or acquisition, a sale of the Company or a sale or licensing of its intellectual property. To date, the Company has been unable to identify a satisfactory strategic alternative.

On August 31, 2005, the Company terminated substantially all its non-management personnel. The Company expects to incur a charge of approximately \$350,000 in the quarter ending September 30, 2005 in connection with these terminations and the discontinuation of research and product development activities. The Company is currently discussing with its executive officers the restructuring of the Company's contractual obligations to those officers to reduce expenses.

The Company intends to attempt to sell the business or its intellectual property and other operating assets as soon as possible. There is no assurance that these efforts will be successful or that there will be any assets remaining to be distributed to stockholders. The Company believes that it has sufficient resources to fund expenses for the next three months in connection with its efforts to sell the business or its assets, and has entered into a three month sublease of a limited amount of office space at its current address for this purpose.

In addition to its portfolio of intellectual property and early-stage product candidates, MacroChem has two clinical-stage product candidates containing its patented enhancer, SEPA(R): Opterone(R), a topical cream for male testosterone deficiency, and EcoNail(TM), a SEPA-enhanced antifungal nail lacquer to treat a common and potentially debilitating nail infection known as onychomycosis.

## FORWARD-LOOKING STATEMENTS

WITH THE EXCEPTION OF HISTORICAL INFORMATION CONTAINED IN THIS PRESS RELEASE, THE MATTERS DESCRIBED HEREIN ARE FORWARD-LOOKING STATEMENTS THAT INVOLVE RISKS AND UNCERTAINTIES. MACROCHEM'S ACTUAL RESULTS MAY DIFFER SIGNIFICANTLY FROM THE RESULTS DISCUSSED IN THE FORWARD-LOOKING STATEMENTS.

FACTORS THAT MIGHT CAUSE SUCH A DIFFERENCE INCLUDE, BUT ARE NOT LIMITED TO, THOSE DISCUSSED OR REFERRED TO IN THE SECTION ENTITLED "RISK FACTORS" IN MACROCHEM'S ANNUAL REPORT ON FORM 10-K, AS WELL AS THOSE DISCUSSED ELSEWHERE THEREIN, AND INCLUDE, WITHOUT LIMITATION, RISKS REGARDING PRODUCT DEVELOPMENT, THE TIMING AND RESULTS OF CLINICAL TRIALS, THE REGULATORY APPROVAL PROCESS, CAPITAL REQUIREMENTS, FINANCIAL CONDITION, PATENT PROTECTION AND DEPENDENCE ON THIRD PARTIES FOR DEVELOPMENT AND LICENSING ARRANGEMENTS. READERS ARE CAUTIONED NOT TO PLACE UNDUE RELIANCE ON THESE FORWARD-LOOKING STATEMENTS, WHICH SPEAK ONLY AS OF THE DATE HEREOF. MACROCHEM UNDERTAKES NO OBLIGATION TO UPDATE PUBLICLY ANY FORWARD-LOOKING STATEMENTS, WHETHER AS A RESULT OF NEW INFORMATION, FUTURE EVENTS OR OTHERWISE. FOR MORE INFORMATION VISIT OUR WEBSITE, [HTTP://WWW.MACROCHEM.COM](http://www.macrochem.com).

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