

11. PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW 9

5.3%

12. TYPE OF REPORTING PERSON\*

BK

SCHEDULE 13G

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ITEM 1.

(A) NAME OF ISSUER

MINERALS TECHNOLOGIES INC

(B) ADDRESS OF ISSUER'S PRINCIPAL EXECUTIVE OFFICES

405 LEXINGTON AVENUE  
19TH FLOOR  
NEW YORK, NY 10174

ITEM 2.

(A) NAME OF PERSON FILING

STATE STREET BANK AND TRUST COMPANY, TRUSTEE

(B) ADDRESS OF PRINCIPAL BUSINESS OFFICE OR, IF NONE,  
RESIDENCE

225 FRANKLIN STREET, BOSTON, MA 02110

(C) CITIZENSHIP

BOSTON, MASSACHUSETTS

(D) TITLE OF CLASS OF SECURITIES

COMMON STOCK

(E) CUSIP NUMBER

603158106

ITEM 3. IF THIS STATEMENT IS FILED PURSUANT TO RULE 13D-1(B), OR  
13D-2(B), CHECK WHETHER THE PERSON FILING IS A:

(B)  X  BANK AS DEFINED IN SECTION 3(A)(6) OF THE ACT

SCHEDULE 13G

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ITEM 4. OWNERSHIP

(A) AMOUNT BENEFICIALLY OWNED

1,011,703 SHARES

(B) PERCENT OF CLASS

5.3%

(C) NUMBER OF SHARES AS TO WHICH SUCH PERSON HAS:

(I) SOLE POWER TO VOTE OR TO DIRECT THE VOTE OF  
439,816 SHARES

(II) SHARED POWER TO VOTE OR TO DIRECT THE VOTE OF  
571,887 SHARES

(III) SOLE POWER TO DISPOSE OR TO DIRECT THE DISPOSITION OF  
0 SHARES

(IV) SHARED POWER TO DISPOSE OR TO DIRECT THE DISPOSITION OF  
1,011,703 SHARES

ITEM 5. OWNERSHIP OF FIVE PERCENT OR LESS OF A CLASS

NOT APPLICABLE

ITEM 6. OWNERSHIP OF MORE THAN FIVE PERCENT ON BEHALF OF ANOTHER PERSON.

NOT APPLICABLE

ITEM 7. IDENTIFICATION AND CLASSIFICATION OF THE SUBSIDIARY WHICH ACQUIRED THE SECURITY BEING REPORTED ON BY THE PARENT HOLDING COMPANY

NOT APPLICABLE

ITEM 8. IDENTIFICATION AND CLASSIFICATION OF MEMBERS OF THE GROUP

NOT APPLICABLE

ITEM 9. NOTICE OF DISSOLUTION OF GROUP

NOT APPLICABLE

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ITEM 10. CERTIFICATION

THE FOLLOWING CERTIFICATION SHALL BE INCLUDED IF THE STATEMENT IS FILED PURSUANT TO RULE 13D-1(B):

BY SIGNING BELOW I CERTIFY THAT, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THE SECURITIES REFERRED TO ABOVE WERE ACQUIRED IN THE ORDINARY COURSE OF BUSINESS AND WERE NOT ACQUIRED FOR THE PURPOSE OF AND DO NOT HAVE THE EFFECT OF CHANGING OR INFLUENCING THE CONTROL OF THE ISSUER OF SUCH SECURITIES AND WERE NOT ACQUIRED IN CONNECTION WITH OR AS A PARTICIPANT IN ANY TRANSACTION HAVING SUCH PURPOSES OR EFFECT.

THIS REPORT IS NOT AN ADMISSION THAT STATE STREET BANK AND TRUST COMPANY IS THE BENEFICIAL OWNER OF ANY SECURITIES COVERED BY THIS REPORT, AND STATE STREET BANK AND TRUST COMPANY EXPRESSLY DISCLAIMS BENEFICIAL OWNERSHIP OF ALL SHARES REPORTED HEREIN PURSUANT TO RULE 13D-4.

SIGNATURE

AFTER REASONABLE INQUIRY AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, I CERTIFY THAT THE INFORMATION SET FORTH IN THIS STATEMENT IS TRUE, COMPLETE AND CORRECT.

12 FEBRUARY 2007

STATE STREET CORPORATION  
STATE STREET BANK AND TRUST COMPANY,  
TRUSTEE

/S/ SUSAN C. DANIELS  
VICE PRESIDENT