1+HWHURF\FOLF&DUEHQHVDV/LJDQG3UHFXUVRUVWR$Q2O HILQ'LPHUL]DWLRQ&DWDO\VW

&KDUOLH0F/DUQRQ&ODVVRI

3XUSRVH

7KLVSURMHF WVHHNVWRLGHQWLI\WKHPD WHULDOVDQGFRQGLW LRQVQHFHVVDU\W RV\QWKHVL]HDFDWD O\VWZLWK

SRWHQWLDODSSOLFDWL RQVWRWKHSODVWLFVLQGXVWU\7KHRUHWLFDOO\FRRUGLQDWLQJFREDOWWRDQ1KHWHURF\FOLF

FDUEHQHDSDUWLFXODUW\SHRIRUJDQLFFRPSRXQGPLJKW\LHOGDFDWDO\VWZLWKXQLTXHVWUXFWXUDOSURSH UWLHV

6XFKDFDWDO\VWFRXOGUHGXFHWKHZDVWHSURGXFHGGXULQJWKHGLPHUL]DWLRQRUGRXEOL QJLQOHQJWKRIOLQH DU

⍺ROHILQVDQRWKHUFODVVRIRUJDQLFFRPSRXQG7KLVUHDFW LRQLVSHUWLQHQWWRSODVWL FVPDQXIDFW XUHUVEHFDXVH

ZKHQOLQHDU⍺ROHILQVDUHZLWKLQDFHUW DLQUDQJHRIOHQJWKVWKH\IHDWXUHLQVKDPSRRVGHWHUJHQWVDQG

P DQ\RWKHUFRPPRQSURGXFWV

%H\RQGV\QWKHVL]LQJWKHSURSRVHGFRPSRXQGWKHJRDORIWKLVSURMHFWLVWRDQDO\]HLWV

HIIHFWLYHQHVVDVDFDWDO\VWIRUGLPH1 KHWHURF\FO LFFDUEHQHV

0H WKRGV

7KHIRUPDWLRQRIRXUFDWDO\VWUHTXLUHGVHYHUDO V\QWKHW LFVWHSV)LUVW

11 GLPHWK\OLPLGD]ROLXPFDUER[\ODWHZDVSURGXFHGIURPP HWK\OLPLGD]ROHDQGGLPHWK\OFDUERQDW H

$OVR&S &R H WKHQH  ZDVIRUPHGIURPWKHVWDUWLQJ PDWHULDOVGLFREDOWRFWDFDUERQ\ODQG

SHQWDPHWK\OF\FORSHQWDGLHQHLQDIRXUVWHSSURFHVV7KHVHWZRSURGXFWVZHUHUHDFWHGW RV\QWKHVL]HWKH

FRPSOH [&S & R HWKHQH - 11¶GLPHWK\OLPLGD]ROLXP\OLGHQH RXUSUHFDWDO\VW

7RGHWHUPLQHZKHW KHUWKLVILQD OPDWHULDOZDVRISUDFWLFDOYDOXHLW VHIIHFWLYHQHVVL QFD WDO\]LQJWKH

GL PHUL]D WLRQRIKH[HQHZD VH [DPLQHG7KHGHVLUHGSURGXF WLQWKLVUHDFWLRQZDVGRGHFH QHDOLQHDU

⍺ROHILQZKLOHPHWK\OXQGHFDQHZKLFKKDVDEUDQFKHGUD WKHUWKDQOLQHDUVWUXFW XUHDQGODFNVFRPPHUFLDO

YDOXHFRXOGEHDE\SURGXFW7KHSUHFDWDO\VWZDVDFWLYDWHGXVLQJ%URRNKDUW¶VDFLGLQWKHSUHVHQF HRI

KH[HQH7RTXDQWLI\WKHHIILFDF\RIWKHFDW DO\VWWKHFRPSRVLWLRQRIWKHUHDFWLRQPL[WXUHZDVPRQLWRUHG

RYHUWKHFRXUVHRIHOHYHQGD\VZLWKJDVFKURPDWRJUDSK\PDVVVSHFWURPHWU\ *&0UഀKK VWR� Y͐ Y

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XQZDQWHGE\SURGXFW PHWK\OXQGH FHQHDWDQ\SRLQWLQWKHHOHYHQGD\SHULRG+RZHYHUTXDQWLILFDWLRQRI

GRGHFHQHE\FRPSDULVRQWRD QL QWHUQDOVW DQGDUGVXJJHVWHGWKDWGLPHUL]DWLRQZD VH[WUHPHO\VORZXQGH U

W KHJLYHQFRQGLWLRQVVRFDWD O\WLFGLPHUL]DWLRQGLGQRWRFFXUXVLQJWKL VRULJLQDOSUH FDWDO\VW

6LPLODUH[SHULPHQW DWLRQZLWKD QHZUHODWHGSUHFDWDO\VW 

&S & R HWKHQH - 11¶GLPHWK\OEHQ]LPLGD]ROLXP\OLGHQH ZDVDOVRDWWHPSWHG:KLOHWKHV\QWKHVLVRI

WKHUHDFWDQWVQHHGHGWRIRUPWKLVSURGXFWZHUHVXFFHVVIXOWKHILQDOPDWHULDOZDVQHYHUFRQFOXVLYHO\

FKD UDFWHUL]HGGXHWRWLPHOLPLWDWLRQVDQGWHFKQLFDOLVVXHVZLWKWKH105 L QVWUXPHQW

)DFXO W\0HQWRU 3URI5LFKDUG%URHQH

)XQGHGE\WKH.LEEH6FLHQFH)HOORZVKLS

 +DUULV011¶'LPHWK\LPLGD]ROLXP&DUER[\ODWHDVD/LJDQG3UHFXUVRUIRUWKH$FFHVVLRQRID

&RQVW UDLQHG2OHIL Q'LPHUL]DWLRQ&DWDO\VW 