

'58&.)\$5%(1 + (// \$6 6\$

.5\$)7 0(7\$/ 35,0(5

5YLVLRQ QU (1  
'DWHG  
3ULQWHG RQ  
3DJH Q  
5HSODFHG UHYLVLRQ 'DWHG

### 6DIHW\ 'DWD 6KHHW

\$FFRUGLQJ WR \$QQH[ ,, WR 5(\$&+ 5HJXODWLRQ (8 DQG WR \$QQH[

#### 6(&7,21 ,GHQWLILFDWLRQ RI WKH VXEVWDQFH PL[WXUH DQG RI W

3URGXFW LGHQWLILHU

&RGH &.  
3URGXFW QDPH .5\$)7 0(7\$/ 35,0(5

8), &6 7 ; 9 56 6

5HOHYDQW LGHQWLILHG XVHV RI WKH VXEVWDQFH RU PL[WXUH DQG XVHV DGYLVHG DJDLQ

,QWHQG HG XVH 8QGUFRDW IRU PHWDOOLF VXUIDFHV

'HWDLOV RI WKH VXSSOLHU RI WKH VDIHW\ GDWD VKHHW

1DPH '58&.)\$5%(1 + (// \$6 6\$  
)XOO DGGUHV 0(\*\$5,'26 \$9(18(  
'LVWULFW DQG &RXQWU\ \$63523<5\*26 \$77,..  
\*5((&(

7HO  
)D[  
H PDLO DGGUHV RI WKH FRPSHWHQW SHUVRQ  
UHVSRQVLEOH IRU WKH 6DIHW\SDUDW\K#GUXFNIDUEHQ JU

(PHUJHQF\ WHOHSCRQH QXPEHU

)RU XUJHQW LQTXLULHV UHIHU WR

#### 6(&7,21 +D]DUGV LGHQWLILFDWLRQ

&ODVVLILFDWLRQ RI WKH VXEVWDQFH RU PL[WXUH

7KH SURGXFW LV FODVVLILHG DV KD]DUGRXV SXUVXDQW WR WKH SURYLVLRQV VHW IRUWK  
DPHQGPHQWV DQG VXSSOHPHQWV 7KH SURGXFW WKXV UHTXLUHV D VDIHW\ GDWDVKHHW V

\$Q\ DGGLWLRQDO LQIRUPDWLRQ FRQFHUQLQJ WKH ULNVN IRU KHDOWK DQG RU WKH HQYLUR

+D]DUG FODVVLILFDWLRQ DQG LQGLFDWLRQ  
)ODPPDEOH OLTXLG FDWHJRU\ + )ODPPDEOH OLTXLG DQG  
\$VSLUDWLRQ KD]DUG FDWHJRU\ + 0D\ EH IDWDO LI VZDOO  
6SHFLILF WDUJHW RUJDQ WR[LFLW\ VLQJOH H[SODV\H GURZVLQHV RU GL]]LQHV  
FDWHJRU\  
+D]DUGRXV WR WKH DTXDWLF HQYLURQPHQW FKURQLF WR DTXDWLF OLIH ZLWK ORQJ ODV  
WR[LFLW\ FDWHJRU\

/DEHO HOHPHQWV

+D]DUG ODEHOOLQJ SXUVXDQW WR (& 5HJXODWLRQ &/3 DQG VXEVHTXHQW DPHQGP

+D]DUG SLFWRJUDPV



6LJQDO ZRUGV 'DQJHU

+D]DUG VWDWHPHQWV  
+ )ODPPDEOH OLTXLG DQG YDSRXU  
+ 0D\ EH IDWDO LI VZDOORZHG DQG HQWHUV DLUZD\



'58 & .) \$5 % ( 1 + ( // \$ 6 6 \$  
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5YLVLRQ QU (1  
 'DWHG  
 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 +D] DUGV LGHQWLILFDWLRQ

+ 0D\ FDXVH GURZVLQHV RU GL]]LQHV  
 + 7R[LF WR DTXDWLF OLIH ZLWK ORQJ ODVWLQJ HIIHFWV  
 (8+ 5HSHDWHG H[SRVXUH PD\ FDXVH VNLQ GU\QHV RU FUDFNLQJ

3UHFDXWLRQDU\ VWDWHPHQWV

3 .HHS DZD\ IURP KHDW KRW VXUIDFHV VSDUNV RSHQ IODPHV DQG RWKH  
 3 'R 127 LQGXFH YRPLWLQJ  
 3 :HDU SURWHFWLYH JORYHV SURWHFWLYH FORWKLQJ H\H SURWHFWLRQ  
 3 3 ,) 6:\$/2:( ' LPPHGLDWHO\ FDOO D 32,621 &(17(5 RU D GRFWRU  
 3 3 ,Q FDVH RI ILUH XVH DOFRKRO UHVLVWDQW IRDP WR H[WLQJXLVK  
 3 \$YRLG UHOHDVH WR WKH HQYLURQPHQW  
 3 .HHS RXW RI UHDFK RI FKLOGUHQ  
 3 \$YRLG EUHDWKLQJ GXVW IXPH JDV PLVW YDSRXUV VSUD\  
 3 'LVS RVH RI FRQWHQWV FRQWDLQHU WR DQ DSSURYHG ZDVWH GLVSRVD  
 3 QDWLRQDO LQWHUQDWLRQDO UHJXODWLRQV

&RQWDLQV +\GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWL

2WKHU KD]DUGV

2Q WKH EDVLV RI DYDLODEOH GDWD WKH SURGXFW GRHV QRW FRQWDLQ DQ\ 3%7 RU Y3Y%  
 7KH SURGXFW GRHV QRW FRQWDLQ VXEVDQFHV ZLWK HQGRFULQH GLVUXSWLQJ SURSHUWL

6 (& 7, 21 &RPSRVLWLRQ LQIRUPDWLRQ RQ LQJUHGLHQWV

0L[WXUHV

&RQWDLQV

,GHQWLILFDWLRQ [ &RQF &ODVVLILFDWLRQ (& &/3

7, 7 \$1,80 ', 2;, '(

INDEX " [

EC 236-675-5

CAS 13463-67-7

REACH Reg. 01-2119489379-17-0000 01-2119489379-17-0197 01-2119489379-17

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV

INDEX 649-327-00-6 " [ )ODP /LT + \$VS 7R[ + 6727 6( + (8+ &C  
 QRWH DFFRUGLQJ WR \$QQH[ 9, WR WKH &/3 5HJXODWLRQ

EC 919-857-5

CAS 64742-48-9

REACH Reg. 01-2119463258-33

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV

INDEX 649-327-00-6 " [ )ODP /LT + \$VS 7R[ + 6727 6( + (8+ &C  
 QRWH DFFRUGLQJ WR \$QQH[ 9, WR WKH &/3 5HJXODWLRQ

EC 919-857-5

CAS 64742-48-9

REACH Reg. 01-2119463258-33

=LQF 2[LGH

INDEX 030-013-00-7 " [

\$TXDWLF \$FXWH + 0 \$TXDWLF &KURQLF + 0

EC 215-222-5

CAS 1314-13-2

REACH Reg. 01-2119463881-32-0073 01-2119463881-32

; \OHQH RUWKR

INDEX 601-022-00-9 " [ )ODP /LT + \$FXWH 7R[ + \$FXWH 7R[ + 6N  
 &ODVVLILFDWLRQ QRWH DFFRUGLQJ WR \$QQH[ 9, WR WKH &C

EC 202-422-2

CAS 95-47-6

REACH Reg. 01-2119488216

7UL =LQF %LV 2UWKRSKRVS KDWH

INDEX 030-011-00-6 " [

\$TXDWLF \$FXWH + 0 \$TXDWLF &KURQLF + 0

EC 231-944-3

CAS 7779-90-0

REACH Reg. 01-2119485044-40-0000

01-2119485044-40-0001



'58 & .) \$5 % ( 1 + ( // \$ 6 6 \$  
 .5 \$ ) 7 0 ( 7 \$ / 35 , 0 ( 5

YLVLRQ QU (1  
 'DWHG  
 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 & RPSRVLWLRQ LQIRUPDWLRQ! RQ LQJUHGLHQWV

Q %XW\O \$FHWDWH  
 INDEX 607-025-00-1 " [ )ODP /LT + 6727 6( + (8+  
 EC 204-658-1  
 CAS 123-86-4  
 REACH Reg. 01-2119485493-29-0007 01-2119485493-29-0005 01-2119485493-29-0003 01-2119485493-29  
 ;\OHQH  
 INDEX 601-022-00-9 " [ )ODP /LT + \$FXWH 7R[ + \$FXWH 7R[ + \$V  
 6727 5( + (\H ,UULW + 6NLQ ,UULW + 6727  
 \$TXDWLF &KURQLF + &ODVVLILFDWLRQ QRWH DFFRU  
 &/3 5HJXODWLRQ &  
 EC 215-535-7 /' 'HUPDO PJ NJ /& ,QKDODWLRQ YDSRXUV PJ  
 CAS 1330-20-7  
 REACH Reg. 01-2119488216-32  
 \$FHWRQH  
 INDEX 606-001-00-8 " [ )ODP /LT + (\H ,UULW + 6727 6( + (8+  
 EC 200-662-2  
 CAS 67-64-1  
 REACH Reg. 01-2119471330-49-0003  
 4XDUW] &U\WVWDOOLQH 6LOLFD  
 INDEX " [ 6XEVDQFH ZLWK D FRPPXQLW\ ZRUNSODFH H[SRVXUH C  
 EC 238-878-4  
 CAS 14808-60-7  
 GL WHUW %XW\O S FUHVRO  
 INDEX " [ \$TXDWLF \$FXWH + 0 \$TXDWLF &KURQLF + 0  
 EC 204-881-4  
 CAS 128-37-0  
 REACH Reg. 01-2119565113-46  
 7KH IXOO ZRUGLQJ RI KD]DUG + SKUDVHV LV JLYHQ LQ VHFWRQ RI WKH VKHHW

6 (& 7, 21 )LUVW DLG PHDVXUHV

'HVFULSWLRQ RI ILUVW DLG PHDVXUHV  
 (<6 5HPRYH FRQWDFW OHQVHV LI SUHVHQW :DVK LPPHGLDWHO\ ZLWK SOHQW\ RI ZD  
 SHUVLVWV VHHN PHGLFDO DGylfH  
 6.,1 5HPRYH FRQWDFWPHGLFDO FORWKLQJ 5LQVH VNLQ ZLWK D VKRZHU LPPHGLDWHO\  
 FORWKLQJ EHIRUH XVLQJ LW DJDLQ  
 ,1+\$/7,21 5HPRYH WR RSHQ DLU ,I WKH VXEMHFW VWRSV EUHDWKLQJ DGPLQLVWHU DUWLI  
 ,1\*(67,21 \*HW PHGLFDO DGylfH DWWHQWLRQ LPPHGLDWHO\ 'R QRW LQGXFH YRPLWLQ  
 GRFWRU  
 0RVW LPSRUWDQW V\PSWRPV DQG HIIHFV ERWK DFXWH DQG GHOD\HG  
 6SHFLILF LQIRUPDWLRQ RQ V\PSWRPV DQG HIIHFV FDXVHG E\ WKH SURGXFW DUH XQNQRZO  
 ,QGLFDWLRQ RI DQ\ LPPHGLDWH PHGLFDO DWWHQWLRQ DQG VSHFLDO WUHDWPHQW QHHG  
 ,QIRUPDWLRQ QRW DYDLODEOH

6 (& 7, 21 )LUHILJKWLQJ PHDVXUHV

([WLQJXLVQLQJ PHGLD  
 68,7\$%/( (;7,1\*8,6+,1\* (48,30(17  
 ([WLQJXLVQLQJ VXEVWDQFHV DUH FDUERQ GLR[LGH IRDP FKHPLFDO SRZGHU )RU SURGXFW  
 EH XVHG WR GLVSHUV IODPPDEOH YDSRXUV DQG SURWHFW WKRVH WU\LQJ WR VWHP WKH O  
 8168,7\$%/( (;7,1\*8,6+,1\* (48,30(17  
 'R QRW XVH MHVV RI ZDWHU :DWHU LV QRW HIIHFWLYH IRU SXWWLQJ RXW ILUHV EXW FDQ E  
 6SHFLDO KD]DUGV DULVLQJ IURP WKH VXEVWDQFH RU PL[WXUH  
 +\$=\$5'6 &\$86(' %< (;32685( ,1 7+( (9(17 2) ),5(  
 ([FHVV SUHVXUH PD\ IRUP LQ FRQWDLQHU H[SRVHG WR ILUH DW D ULVN RI H[SRVLRQ 'R  
 \$GYLFH IRU ILUHILJKWHUV  
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'58 & .) \$5 % ( 1 + ( // \$ 6 6 \$  
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YLVLRQ QU (1  
 'DWHG  
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 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

8VH MHWV RI ZDWHU WR FRRO WKH FRQWDLQHUV WR SUHYHQW SURGXFW GHFRPSRVLWLRQ D  
 KHDOWK \$OZDV ZHDU IXOO ILUH SUHYHQWLRQ JHDU &ROOHFW H[WLQJXLVQLQJ ZDWHU WR  
 FRQWDLQDWHG ZDWHU XVHG IRU H[WLQFWLRQ DQG WKH UHPDLQV RI WKH ILUH DFFRUGLQJ  
 63(&,\$/ 3527(&7,9( (48,30(17 )25 ),5( ),\*+7(56  
 1RUPDO ILUH ILJKWLQJ FORWKLQJ L H ILUH NLW %6 (1 JORYHV %6 (1 DQG ERRWV  
 VHOI FRQWDLQHG RSHQ FLUFXLW SRVLWLYH SUHVXUH FRPSUHVVHG DLU EUHDWKLQJ DSSDU

**6(&7,21 \$FFLGHQWDO UHOHDVH PHDVXUHV**

3HUVRQDO SUHFDXWLRQV SURWHFWLYH HTXLSPHQW DQG HPHUJHQF\ SURFHGXUHV  
 %ORFN WKH OHDNDJH LI WKHUH LV QR KDJDUG  
 :HDU VXLWDEOH SURWHFWLYH HTXLSPHQW LQFOXGLQJ SHUVRQDO SURWHFWLYH HTXLSPHQW  
 DQ\ FRQWDLQDWHG RI VNLQ H\HV DQG SHUVRQDO FORWKLQJ 7KHVH LQGLFDWLRQV DSSDU  
 SURFHGXUHV  
 6HQG DZD\ LQGLYLGXDOV ZKR DUH QRW VXLWDEO\ HTXLSSHG 8VH H[SORVLRQ SURRI HTXLSP  
 VSDUNV HWF IURP WKH OHDNDJH VLWH  
 (QYLURQPHQWDO SUHFDXWLRQV  
 7KH SURGXFW PXVW QRW SHQHWUDWH LQWR WKH VZHUV\ V\WHP RU FRPH LQWR FRQWDFW Z  
 OHWKRGV DQG PDWHULDO IRU FRQWDLQPHQW DQG FOHDQLQJ XS  
 &ROOHFW WKH OHDNHG SURGXFW LQWR D VXLWDEOH FRQWDLQHU (YDOXDWH WKH FRPSDWL  
 UHPDLQGHU ZLWK LQHUW DEVRUEHQW PDWHULDO  
 ODNH VXUH WKH OHDNDJH VLWH LV ZHOO DLUHG &RQWDLQDWHG PDWHULDO VKRXOG EH GL  
 SHIHUHQFH WR RWKHU VHFWRQV  
 \$Q\ LQIRUPDWLRQ RQ SHUVRQDO SURWHFWLRQ DQG GLVSRVDO LV JLYHQ LQ VHFWRQV DQC

**6(&7,21 +DQGOLQJ DQG VWRUDJH**

3UHFDXWLRQV IRU VDIH KDQGOLQJ  
 .HHS DZD\ IURP KHDW VSDUNV DQG QDNHG IODPHV GR QRW VPRNH RU XVH PDWFKHV RU OL  
 DFFXPXODWH DW JURXQG OHYHO DQG LI LJQLWHG FDWFK ILUH HYHQ DW D GLVWDQFH ZLW  
 'R QRW HDW GULQN RU VPRNH GXULQJ XVH 5HPRYH DQ\ FRQWDLQDWHG FORWKHV DQG SH  
 SHRSOH HDW \$YRLG OHDNDJH RI WKH SURGXFW LQWR WKH HQYLURQPHQW  
 &RQGLWLRQV IRU VDIH VWRUDJH LQFOXGLQJ DQ\ LQFRPSDWLELOLWLHV  
 6WRUH RQO\ LQ WKH RULJLQDO FRQWDLQHU 6WRUH LQ D FRRO DQG ZHOO YHQWLODWHG SO  
 DQG RWKHU VRXUFHV RI LJQLWLRQ .HHS FRQWDLQHUV DZD\ IURP DQ\ LQFRPSDWLEOH PDWH  
 6SHFLILF HQG XVH V  
 ,QIRUPDWLRQ QRW DYDLODEOH

**6(&7,21 ([SRVXUH FRQWUROV SHUVRQDO SURWHFWLRQ**

&RQWURO SDUDPHWHUV  
 5HJXODWRU\ UHIHUHQFHV  
 %\*5 ;te]Zjby G:J?>;: < HL >?D?F<JB = A: A:SBL: G: J::HL?SBL? HL JBKDH  
 K<TJA:GB K ?DKIHABPBY G: OBFBQGB :=?GLB IJB J::HL: baf >< [j  
 YgmZjb ]  
 '(8 'HXWVFKODQGRUVFKXQJVVJHPHLQVFKDIW 0\$. XQG %\$7 :HUWH /LVWH 6WIQGLJ  
 3U•IXQJ JHVXQGKHLWVVFQIGOLFKHU \$UEHLWVWVRIIH 0LWWHLOXQJ  
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 ü ¶¶1\$02 0 2 Œ! 12.1 . 2& 0! . & .Œ) 2 #" /\* #" Œ #  
 2 01 10 .! ) #" 02. . ) #" Œ.! 20" .2 2 0! .1 .¶¶<sup>a</sup>  
 528 5RPkQLD +RW UkUHD QU SHQWUX PRGLILFDUHD KRW UkULL JXYHUQXO  
 PRGLILFDUHD L FRPSOHWDUHD KRW UkULL JXYHUQXOXL QU



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 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6(&7,21 ([SRVXUH FRQWUROV SHUVRQDO SURWHFWLRQ  
 \*%5 8QLWHG .LQJGRP :RUNSODFH H[SRVXUH OLPLWV )RXUWK (GLWLRQ  
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7KUHVKROG /LPLW 9DOXH  
 7\SH &RXQWU\ 7:\$ K 67(/ PLQ 5HPDUNV 2EVHUYDWLRQV  
 PJ P SSP PJ P SSP  
 2(/ (8  
 3UHGLFWHG QR HIIHFV FRQFHQWUDWLRQ 31(&  
 1RUPDO YDOXH LQ IUHVK ZDWHU PJ O  
 1RUPDO YDOXH LQ PDULQH ZDWHU PJ O  
 +HDOWK 'HULYHG QR HIIHFV OHYHO '1(/ '0(/  
 (IIHFVW RQ FRQVXPHUV (IIHFVW RQ ZRUNHUV  
 5RXWH RI H[SRVXUH \$FXWH &KURQLF&KURQLF \$KURQLF&KURQLF  
 ORFDO V\VWHPLF ORFDO V\VWHPLF V\VWHPLF ORFDO V\VWHPLF  
 ,QKDODWLRQ 91'  
 PJ NJ  
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:\OHQH

7KUHVKROG /LPLW 9DOXH  
 7\SH &RXQWU\ 7:\$ K 67(/ PLQ 5HPDUNV 2EVHUYDWLRQV  
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7KUHVKROG /LPLW 9DOXH  
 7\SH &RXQWU\ 7:\$ K 67(/ PLQ 5HPDUNV 2EVHUYDWLRQV  
 PJ P SSP PJ P SSP  
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 0\$. '(8 5(63

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7KUHVKROG /LPLW 9DOXH  
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4XDUW] &U\VWDOOLQH 6LOLFD

7KUHVKROG /LPLW 9DOXH  
 7\SH &RXQWU\ 7:\$ K 67(/ PLQ 5HPDUNV 2EVHUYDWLRQV  
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5 YLVLRRQ QU (1  
 1 DWHG  
 3 ULQWHG RQ  
 3 DJH Q  
 5 HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 ([SRVXUH FRQWUROV SHUVRQDO SURWHFWLRQ

\$FHWRQH

7KUHVKROG /LPLW 9DOXH

7\SH &RXQWU\ 7:\$ K 67(/ PLQ 5HPDUNV 2EVHUYDWLRQV  
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7KUHVKROG /LPLW 9DOXH

7\SH &RXQWU\ 7:\$ K 67(/ PLQ 5HPDUNV 2EVHUYDWLRQV  
 PJ P SSP PJ P SSP

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 +HDOWK 'HULYHG QR HIIHFV OHYHO '1(/ '0(/  
 (IIHFV RQ FRQVXPHUV (IIHFV RQ ZRUNHUV  
 5RXWH RI H[SFXWH SFXWH &KURQLF&KURQLF \$KURQLF&KURQLF  
 ORFDO V\VWHPLF ORFDO V\VWHPLF V\VWHPLF ORFDO V\VWHPLF  
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 ,QKDODWLRQ PJ NJ G 91' 91'  
 PJ P PJ P  
 6NLQ 91' 91' PJ NJ G PJ NJ G

; \OHQH RUWKR

7KUHVKROG /LPLW 9DOXH

7\SH &RXQWU\ 7:\$ K 67(/ PLQ 5HPDUNV 2EVHUYDWLRQV  
 PJ P SSP PJ P SSP

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 7/9 \$&\*,+

3UHGLFWHG QR HIIHFV FRQFHQWUDWLRQ 31(&  
 1RUPDO YDOXH LQ IUHVK ZDWHU PJ O  
 1RUPDO YDOXH LQ PDULQH ZDWHU PJ O  
 1RUPDO YDOXH IRU IUHVK ZDWHU VHGLPHQW PJ NJ  
 1RUPDO YDOXH IRU PDULQH ZDWHU VHGLPHQW PJ NJ  
 +HDOWK 'HULYHG QR HIIHFV OHYHO '1(/ '0(/  
 (IIHFV RQ FRQVXPHUV (IIHFV RQ ZRUNHUV  
 5RXWH RI H[SFXWH SFXWH &KURQLF&KURQLF \$KURQLF&KURQLF  
 ORFDO V\VWHPLF ORFDO V\VWHPLF V\VWHPLF ORFDO V\VWHPLF  
 2UDO 91'  
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 ,QKDODWLRQ PJ P PJ P PJ P PJ P PJ P PJ P PJ P  
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 6NLQ 91' 91' PJ NJ G PJ NJ G



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5YLVLRQ QU (1  
 'DWHG  
 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6 (& 7,21 ([SRVXUH FRQWUROV SHUVRQDO SURWHFWLRQ

Q %XW\O \$FHWDWH

7KUHVKROG /LPLW 9DOXH		7:\\$ K		67(/ PLQ 5HPDUNV		2EVHUYDWLRQV	
7\SH	&RXQWU\	PJ P	SSP	PJ P	SSP		
7/9	%*5					6.,1	
\$*:	'(8						
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7/9	528					6.,1	
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2(/	(8					6.,1	
3UHGLFWHG QR HIIHFV FRQFHQWUDWLRQ 31(&							
1RUPDO YDOXH LQ IUHVK ZDWHU						PJ O	
1RUPDO YDOXH LQ PDULQH ZDWHU						PO O	
1RUPDO YDOXH IRU IUHVK ZDWHU VHGLPHQW						PJ NJ	
1RUPDO YDOXH IRU PDULQH ZDWHU VHGLPHQW						PJ NJ	
1RUPDO YDOXH IRU ZDWHU LQWHUPLWWHQW UHOHDVH						PJ O	
1RUPDO YDOXH RI 673 PLFURRUJDQLVPV						PJ O	
+HDOWK 'HULYHG QR HIIHFV OHYHO '1(/ '0(/							
(IIHFV RQ FRQVXPHUV				(IIHFV RQ ZRUNHUV			
5RXWH RI H[SRVXUH \$FXWH		&KURQLF&KURQLF		\$KURQLF&KURQLF		\$KURQLF&KURQLF	
ORFDO \V\WHPLF		ORFDO \V\WHPLF		V\VWHPLF		V\VWHPLF	
2UDO		91'		PJ NJ			
,QKDODWLRQ		91'		PJ P		91' 91'	
6NLQ		91'		PJ NJ		91' PJ P	

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7KUHVKROG /LPLW 9DOXH		7:\\$ K		67(/ PLQ 5HPDUNV		2EVHUYDWLRQV	
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7/9	*5&						
7/9	528						
:(/	*%5					,1+\$/	
:(/	*%5					5(63	
7/9 \$*+,						5(63	

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDW

7KUHVKROG /LPLW 9DOXH		7:\\$ K		67(/ PLQ 5HPDUNV		2EVHUYDWLRQV	
7\SH	&RXQWU\	PJ P	SSP	PJ P	SSP		
7/9	*5&						
+HDOWK 'HULYHG QR HIIHFV OHYHO '1(/ '0(/							
(IIHFV RQ FRQVXPHUV				(IIHFV RQ ZRUNHUV			
5RXWH RI H[SRVXUH \$FXWH		&KURQLF&KURQLF		\$KURQLF&KURQLF		\$KURQLF&KURQLF	
ORFDO \V\WHPLF		ORFDO \V\WHPLF		V\VWHPLF		V\VWHPLF	
2UDO		91'		PJ NJ G			
,QKDODWLRQ		91'		PJ P		91' PJ P	
6NLQ		91'		PJ NJ G		91' PJ NJ G	

/HJHQG  
 & (&./,1\* ,1+\$/ ,QKDODEOH )UDFWLRQ 5(63 5HVSLUDEOH )UDFWLRQ 7+25\$  
 91' KD]DUG LGHQWLILHG EXW QR '1(/ 31(& DYDLODEOH 1(\$ QR H[SRVXUH H[SHFWHG  
 0(' PHGLXP KD]DUG +,\*+ KLJK KD]DUG

([SRVXUH FRQWUROV

\$V WKH XVH RI DGHTXDWH WHFKQLFDO HTXLSPHQW PXVW DOZD\V WDNH SULRULW\ RYHU SHU  
 ZHOO DLUHG WKURXJK HIIHFWLYH ORFDO DVSLUDWLRQ



'58 & .) \$5 % ( 1 + ( // \$ 6 6 \$  
 .5 \$ ) 7 0 ( 7 \$ / 35 , 0 ( 5

5 YLVLQR QU (1  
 'DWHG  
 3 ULQWHG RQ  
 3 DJH Q  
 5 HSODFHG UHVLVLRQ 'DWHG

6 (&7,21 ([SRVXUH FRQWUROV SHUVRQDO SURWHFWLRQ

:KHQ FKRRVLQJ SHUVRQDO SURWHFWLYH HTXLSPHQW DVN \RXU FKHPLFDO VXEVDQFH VXSS  
 3HUVRQDO SURWHFWLYH HTXLSPHQW PXVW EH &( PDUNHG VKRZLQJ WKDW LW FRPSOLHV ZLV  
 +\$1' 3527(&7,21  
 3URWHFW KDQGV ZLWK FDWHJRU\ , , ZRUN JORYHV  
 7KH IROORZLQJ VKRXOG EH FRQVLGHUHG ZKHQ FKRRVLQJ ZRUN JORYH PDWHULDO VHH VWD  
 SHUPHDELWLW\  
 7KH ZRUN JORYHV UHVLVWDQFH WR FKHPLFDO DJHQWV VKRXOG EH FKHFNHG EHIRUH XVH D  
 WKH GXUDWLRQ DQG W\SH RI XVH  
 6. ,1 3527(&7,21  
 :HDU FDWHJRU\ , SURIHVVLRQDO ORQJ VOHHYHG RYHUDOOV DQG VDIHW\ IRRWZHDU VHH 5H  
 ZLWK VRDS DQG ZDWHU DIWHU UHPRYLQJ SURWHFWLYH FORWKLQJ  
 &RQVLGHU WKH DSSURSULDWHQHVV RI SURYLGLQJ DQWLVDWLF FORWKLQJ LQ WKH FDUH RI  
 (< 3527(&7,21  
 :HDU DLUWLJKW SURWHFWLYH JRJJOHV VHH VWDQGDUG (1 ,62  
 5(63,5\$725< 3527(&7,21  
 5HVSLUDWRU\ SURWHFWLRQ GHYLFHV PXVW EH XVHG LI WKH WHFKQLFDO PHDVXUHV DGRSWH  
 WKUHVKROG YDOXH FRQVLGHUHG 8VH D PDVN ZLWK D W\SH \$ ILOWHU ZKRWH FODVV R  
 FRQFHQWUDWLRQ VHH VWDQGDUG (1  
 ,I WKH VXEVDQFH FRQVLGHUHG LV RGRXUOHVV RU LWV ROIDFWRU\ WKUHVKROG LV KLJKHU  
 HPHUJHQF\ ZHDU RSHQ FLUFXLW FRPSUHVVHG DLU EUHDWKLQJ DSSDUDWXV LQ FRPSOLDQF  
 DSSDUDWXV LQ FRPSOLDQFH ZLWK VWDQGDUG (1 )RU D FRUHHFW FKRLFH RI UHVSUDW  
 (19,5210(17\$/ (;32685( &21752/6  
 7KH HPLVVLRQV JHQHUDWHG E\ PDQXIDFWXULQJ SURFHVVHV LQFOXGLQJ WKRVH JHQHUDWH  
 FRPSOLDQFH ZLWK HQYLURQPHQWDO VWDQGDUGV  
 3URGXFW UHVLGXHV PXVW QRW EH LQGLVFULPLQDWHO\ GLVSRVHG RI ZLWK ZDVWH ZDWHU R

6 (&7,21 3K\VLFDQ DQG FKHPLFDO SURSHUWLHV

,QIRUPDWLRQ RQ EDVLF SK\VLFDQ DQG FKHPLFDO SURSHUWLHV  
 3URSHUWLHV 9DOXH ,QIRUPDWLRQ  
 \$SSHUHQFH OLTXLG 7HPSHUXUH f &  
 &RORXU ZKLWH 7HPSHUXUH f &  
 2GRXU FKDUDFWHULVWLF  
 0HOWLQJ SRLQW IUHH]LQJ SRLQW QRW DYDLODEOH  
 ,QLWLDQ ERLQJ SRLQW QRW DYDLODEOH  
 )ODPPDELWLW\ QRW DYDLODEOH  
 /RZHU H[SORVLYH OLPLW QRW DYDLODEOH  
 8SSHU H[SORVLYH OLPLW QRW DYDLODEOH  
 )ODVK SRLQW " 7 " f &  
 \$XWR LJQLWLRQ WHPSHUXUH QRW DYDLODEOH  
 'HFRPSRVLWLRQ WHPSHUXUH QRW DYDLODEOH  
 S+ QRW DYDLODEOH 5HDVLRQ IRU PLVVLQJ GDV  
 .LQHPDWLF YLVFRVLW\ PP V QRW VROXEHOH LQ  
 'QDPLF YLVFRVLW\ .8 9LVFRVLW\ 0HWKRQ &RQYHUWLQJ  
 7HPSHUXUH f &  
 7HPSHUXUH \$670 ' 0HWKRQ f &  
 6ROXELWLW\ QRW DYDLODEOH  
 3DUWLWLRQ FRHILFLHQW Q RFDQRO ZDWHU QRW DYDLODEOH  
 9DSRXU SUHVXUH QRW DYDLODEOH  
 'HQVLW\ DQG RU UHODWLYH GHQVLW\ J FP 0HWKRQ ,62  
 5HODWLYH YDSRXU GHQVLW\ QRW DYDLODEOH 7HPSHUXUH f &  
 3DUWLFOH FKDUDFWHULVWLF QRW DSSOLFDEOH  
 2WKHU LQIRUPDWLRQ  
 ,QIRUPDWLRQ ZLWK UHJDUG WR SK\VLFDQ KDJDUG FODVVHV  
 ,QIRUPDWLRQ QRW DYDLODEOH  
 2WKHU VDIHW\ FKDUDFWHULVWLFV





'58&.)\$5%(1+(// \$6 6\$  
 .5\$)7 0(7\$/ 35,0(5

YLVLQR QU (1  
 'DWHG  
 3JLQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6(&7,21 3K\VLFDQ DQG FKHPLFDQ SURSHUWLHV

7RWDO VROLGV f& f)

6(&7,21 6WDELOLW\ DQG UHDFWLYLW\

5HDFWLYLW\

7KHUH DUH QR SDUWLFXODU ULVNV RI UHDFWLRQ ZLWK RWKHU VXEVDQFHV LQ QRUPDO FRO

\$FHWRQH

'HFRPSRVHV XQGHU WKH HIIHFW RI KHDW

Q %XW\O \$FHWDWH

6WDEOH LQ QRUPDO FRQGLWLRQV RI XVH DQG VWRUDJH

:LWK WKH DLU LW PD\ VORZO\ GHYHORS SHUR[LGHV WKDW H[SORGH ZLWK DQ LQFUHDVH LQ

&KHPLFDQ VWDELOLW\

7KH SURGXFW LV VWDEOH LQ QRUPDO FRQGLWLRQV RI XVH DQG VWRUDJH

3RVVLELOLW\ RI KD]DUGRXV UHDFWLRQV

7KH YDSRXUV PD\ DOVR IRUP H[SORVLYH PL[WXUHV ZLWK WKH DLU

;\OHQH

6WDEOH LQ QRUPDO FRQGLWLRQV RI XVH DQG VWRUDJH 5HDFWV YLROHQWO\ ZLWK VWURQ

H[SORVLYH PL[WXUHV ZLWK DLU

\$FHWRQH

5LVN RI H[SORVLRQ RQ FRQWDFW ZLWK EURPLQH WULIOXRULGH IOXRULQH GLR[LGH K\GUR

EXWDGLHQH QLWURPHWKDQH QLWURV\O SHUFKORUDWH OD\ UHDFW GDQJHURXVO\ ZLWK SR

K\GUR[LGHV EURPLQH EURPRIRUP LVRSUHQH VRGLXP VXOSKXU GLR[LGH FKURPLXP WULR[L

DFLG FKORURIRUP SHUR[\PRQRVXOSKXULF DFLG SKRVSKRU\O R[\FKORULGH FKURPRVXOSKX

DJHQWV 'HYHORSV IODPPDEOH JDV RQ FRQWDFW ZLWK QLWURV\O SHUFKORUDWH

;\OHQH RUWKR

;</(1( 0,;785( 2) ,620(56 VWDEOH EXW PD\ GHYHORS YLROHQW UHDFWLRQV LQ WKH SUHV

DQG QLWULF DFLGV DQG SHUFKORUDWHV OD\ IRUP H[SORVLYH PL[WXUHV ZLWK WKH DLU

Q %XW\O \$FHWDWH

OD\ UHDFW YLROHQWO\ ZLWK R[LGLVLQJ VXEVDQFHV VWURQJ DFLGV DONDOLQH PHWDOV

&RQGLWLRQV WR DYRLG

\$YRLG RYHUKHDWLQJ \$YRLG EXQFKLQJ RI HOHFWURVWDWLF FKDUJHV \$YRLG DOO VRXUFHV

\$FHWRQH

\$YRLG H[SRVXUH WR VRXUFHV RI KHDW QDNHG IODPHV

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV

\$YRLG H[SRVXUH WR KHDW

.HHS DZD\ IURP R[LGLVLQJ DJHQWV

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV

\$YRLG H[SRVXUH WR KHDW

.HHS DZD\ IURP R[LGLVLQJ DJHQWV

,QFRPSDWLEOH PDWHULDOV

\$FHWRQH

,QFRPSDWLEOH ZLWK DFLGV R[LGLVLQJ VXEVDQFHV

Q %XW\O \$FHWDWH

,QFRPSDWLEOH ZLWK R[LGLVLQJ VXEVDQFHV VWURQJ DFLGV DONDOLQH PHWDOV

+D]DUGRXV GHFRPSRVLVWLRQ SURGXFWV

,Q WKH HYHQW RI WKHUPDO GHFRPSRVLVWLRQ RU ILUH JDVHV DQG YDSRXUV WKDW DUH SRW

\$FHWRQH

OD\ GHYHORS NHWHQH V LUULWDQW VXEVDQFHV

6(&7,21 7R[LFRORJLFDQ LQIRUPDWLRQ

,QIRUPDWLRQ RQ KD]DUG FODVVHV DV GHILQH LQ 5HJXODWLRQ (& 1R

;\OHQH RUWKR

;</(1( 0,;785( 2) ,620(56 KDV D WR[LF HIIHFW RQ WKH &16 HQFHSDORSDWKLVH ,UUL

UHVSLUDWRU\ DSSDUDWXV



'58 & .) \$5 % (1 + (// \$6 6 \$  
 .5 \$) 7 0 (7 \$ / 35,0 (5

3 YLVLQR QU (1  
 'DWHG  
 3 ULQWHG RQ  
 3 DJH Q  
 5 HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 7R [LFRORJLFDQ LQIRUPDWLRQ

0HWDEROLVP WR [LFRNLQHWLFV PHFKDQLVP RI DFWLRQ DQG RWKHU LQIRUPDWLRQ

Q %XW\O \$FHWDWH  
 7KH PDLQ URXWH RI HQWU\ LV WKH VNLQ ZKHUHDV WKH UHVSLUDWRU\ URXWH LV OHVV

.QIRUPDWLRQ RQ OLNHO\ URXWHV RI H[SRVXUH

;\OHQH  
 :25.(56 LQKDODWLRQ FRQWDFW ZLWK WKH VNLQ  
 3238/\$7,21 LQJHVWLRQ RI FRQWDFWPLQDWHG IRRG RU ZDWHU LQKDODWLRQ RI DPELHQW

Q %XW\O \$FHWDWH  
 :25.(56 LQKDODWLRQ FRQWDFW ZLWK WKH VNLQ

'HOD\HG DQG LPPHGLDWH HIIHFWV DV ZHOO DV FKURQLF HIIHFWV IURP VKRUW DQG ORQJ WH

;\OHQH  
 7R [LF HIIHFW RQ WKH FHQWUDO QHUYRXV V\VWHP HQFHSDORSWK\ LUULWDWLQJ IRU

Q %XW\O \$FHWDWH  
 \$ERYH SSP FDXVHV LUULWDWLRQ RI WKH H\H QRVH DQG RURSKDU\Q[ PXFRXV PHPEU  
 VHYHUH H\H LUULWDWLRQ FDQ EH QRWLFHG &OLQLFDO DQG ELRORJLFDQ H[DPLQDWLRQ  
 \$FHWDWH SURGXFHV JUHDWHU VNLQ DQG H\H LUULWDWLRQ ZLWK GLUHFV FRQWDFW 1R

.QWHUDEFWLYH HIIHFWV

;\OHQH  
 ,QWDNH RI DOFRKRO LQWHUIHUHV ZLWK WKH PHWDEROLVP RI WKH VXEVDQFH LQKLEL  
 H[SRVXUH WR [\OHQH YDSRXUV DQG SSP FDXVHV D UHGXFWRQ LQ WKH H[FU  
 FRQFHQWUDWLRQ RI [\OHQH LV WKH EORRG LQFUHDVHV DSSUR[ WLPHV \$W WKH  
 HIIHFWV RI WKH HWKDQRO 7KH PHWDEROLVP RI WKH [\OHQH LV LQFUHDVHG E\ SKQR  
 \$VSLULQ DQG [\OHQH PXWXDOO\ LQKLELV WKHLU FRQMXJDWLRQ ZLWK WKH JO\FLQH Z  
 KLSSXULF DFLG 2WKHU LQGXVWULDO SURGXFWV FDQ LQWHUIHUH ZLWK WKH PHWDEROL

\$&87( 72: .& ,7<

\$7( ,QKDODWLRQ YDSRXUV RI WKH PL[WXUH ! PJ O  
 \$7( 2UDO RI WKH PL[WXUH 1RW FODVVLILHG QR VLJQLILFDQW FRPSRQ  
 \$7( 'HUPDO RI WKH PL[WXUH ! PJ NJ

;\OHQH  
 /' 'HUPDO PJ NJ 5DEELW  
 /' 2UDO PJ NJ 5DW  
 /& ,QKDODWLRQ YDSRXUV PJ O K 5DW

7UL =LQF %LV 2UWKRSKRVSVDWH  
 /' 2UDO ! PJ NJ 5DW :LVWDU  
 /& ,QKDODWLRQ PLVWV SRZGHUV PJ O 5DW

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV  
 /' 'HUPDO ! PJ NJ 5DEELW  
 /' 2UDO ! PJ NJ 5DW  
 /& ,QKDODWLRQ YDSRXUV ! PJ O K 5DW

;\OHQH RUWKR  
 /' 'HUPDO ! PJ NJ 5DEELW  
 /' 2UDO PJ NJ 5DW  
 /& ,QKDODWLRQ YDSRXUV SSP K 5DW  
 67\$ ,QKDODWLRQ YDSRXUV PJ O HVWLPDWH IURP WDEOH RI \$QQH[ , RI WKH &  
 ILJXUH XVHG IRU FDOFXODWLRQ RI WKH DFXWH WR [LFLV

Q %XW\O \$FHWDWH  
 /' 'HUPDO ! PJ NJ 5DW  
 /' 2UDO PJ NJ 5DW  
 /& ,QKDODWLRQ YDSRXUV ! PJ O 5DW



'58 & .) \$5 % ( 1 + ( // \$ 6 6 \$  
 .5 \$ ) 7 0 ( 7 \$ / 35,0 ( 5

5YLVLRQ QU (1  
 'DWHG  
 3JLQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 7R[LF RORJLFD O LQIRUPDWLRQ

7,7\$1,80 ',2;,'(  
 /' 2UDO

! PJ NJ 5DW

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV

/' 'HUPDO ! PJ NJ 5DEELW

/' 2UDO ! PJ NJ 5DW

/& ,QKDODWLRQ YDSRXUV ! PJ O K 5DW

6..1 & 25526.21 .55.7\$7,21

5HSHDWHG H[SRVXUH PD\ FDXVH VNLQ GU\QHV V RU FUDFNLQJ

6(5.286 (<(' \$0\$\*( .55.7\$7,21

'RHV QRW PHHW WKH FODVVLILFDWLRQ FULWHULD IRU WKL V KD]DUG FODVV

5(63.5\$725< 25 6..1 6(16.7,6\$7,21

'RHV QRW PHHW WKH FODVVLILFDWLRQ FULWHULD IRU WKL V KD]DUG FODVV

\*(50 & (// 087\$\*(1.&,7<

'RHV QRW PHHW WKH FODVVLILFDWLRQ FULWHULD IRU WKL V KD]DUG FODVV

&\$5&.12\*(1.&,7<

'RHV QRW PHHW WKH FODVVLILFDWLRQ FULWHULD IRU WKL V KD]DUG FODVV

;\OHQH

&ODVVLILHG LQ \*URXS QRW FODVVLILDEOH DV D KXP DQ FDUFLQRJHQ E\ WKH ,QWHUQ

7KH 86 (QYLURQPHQWDO 3URWHFWLRQ \$JHQF\ (3\$ DIILUPV WKDW WKH GDWD LV LQDGH

5(352'8&7.9( 72;.&,7<

'RHV QRW PHHW WKH FODVVLILFDWLRQ FULWHULD IRU WKL V KD]DUG FODVV

6727 6.1\*/( (:32685(

OD\ FDXVH GURZVLQHV V RU GL]]LQHV

6727 5(3(\$7(' (:32685(

'RHV QRW PHHW WKH FODVVLILFDWLRQ FULWHULD IRU WKL V KD]DUG FODVV

\$63.5\$7.21 +\$=\$5'

7R[LF IRU DVSLUDWLRQ

,QIRUPDWLRQ RQ RWKHU KD]DUGV

%DVHG RQ WKH DYDLODEOH GDWD WKH SURGXFW GRHV QRW FRQWDLQ VXEVDQFHV OL VWH

GLVUXSWRUV ZLWK KXP DQ KHDOWK HIIHFWV XQG HU HYDOXDWLRQ

6 (& 7, 21 (FRORJLFD O LQIRUPDWLRQ

7KLV SURGXFW LV GDQJHURXV IRU WKH HQYLURQPHQW DQG LV WR[LF IRU DTXDWLF RUJDQLV  
 HQYLURQPHQW

7R[LFLW\

7UL =LQF %LV 2UWKRSKRVS KDWH

/& IRU )LVK

(& IRU &UXVWDFHD

PJ O K 3LPHSKDOHV SURPHODV

PJ O K 'DSKQLD PDJQD

=LQF 2[LGH

/& IRU )LVK

(& IRU &UXVWDFHD

(& IRU \$OJDH \$TXDWLF 3ODQVW

&KURQLF 12(& IRU )LVK

PJ O K 2QFRUK\QFKXV P\NLVV

PJ O K 'DSKQLD PDJQD

PJ O K 3VHXGRNLUFKQH UHOOD VXEFD

PJ O



'58 & .) \$5 % (1 + (// \$6 6 \$  
 .5 \$) 7 0 (7 \$ / 35,0 (5

5YLVLRR QU (1  
 'DWHG  
 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 (FRORJLFDQ LQIRUPDWLRQ

&KURQLF 12(& IRU \$OJDH \$TXDWLF 3ODQWV PJ O  
 +\GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV  
 /& IRU )LVK ! PJ O K )LVK \$TXDWLF ,QYHUWHEUDWHV \$OJD  
 (& IRU &UXVWDFHD ! PJ O K  
 (& IRU \$OJDH \$TXDWLF 3ODQWV ! PJ O K  
 &KURQLF 12(& IRU )LVK ! PJ O  
 &KURQLF 12(& IRU &UXVWDFHD ! PJ O

;\OHQH RUWKR  
 /& IRU )LVK ! PJ O K 0LFURRUJDQLVPV

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV  
 /& IRU )LVK ! PJ O K )LVK \$TXDWLF ,QYHUWHEUDWHV \$OJD  
 (& IRU &UXVWDFHD ! PJ O K  
 (& IRU \$OJDH \$TXDWLF 3ODQWV ! PJ O K  
 &KURQLF 12(& IRU )LVK ! PJ O  
 &KURQLF 12(& IRU &UXVWDFHD ! PJ O

3HUVLVWHQFH DQG GHJUDGDELOLW\

GL WHUW %XW\O S FUHVRO  
 'HJUDGDELOLW\ LQIRUPDWLRQ QRW DYDLODEOH

;\OHQH  
 6ROXELOLW\ LQ ZDWHU PJ O  
 5DSLGO\ GHJUDGDEOH

7UL =LQF %LV 2UWKRSKRVS KDWH  
 6ROXELOLW\ LQ ZDWHU PJ O  
 'HJUDGDELOLW\ LQIRUPDWLRQ QRW DYDLODEOH

=LQF 2[LGH  
 6ROXELOLW\ LQ ZDWHU PJ O  
 127 UDSLGO\ GHJUDGDEOH

\$FHWRQH  
 5DSLGO\ GHJUDGDEOH

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV  
 5DSLGO\ GHJUDGDEOH

;\OHQH RUWKR  
 5DSLGO\ GHJUDGDEOH

Q %XW\O \$FHWDWH  
 6ROXELOLW\ LQ ZDWHU ! PJ O  
 5DSLGO\ GHJUDGDEOH

7,7\$1,80 ',2;,'(  
 6ROXELOLW\ LQ ZDWHU PJ O  
 'HJUDGDELOLW\ LQIRUPDWLRQ QRW DYDLODEOH

+ \GURFDUERQV & & Q DONDQHV LVRDONDQHV F\FOLFV DURPDWLFV  
 5DSLGO\ GHJUDGDEOH

%LRDFFXPXODWLYH SRWHQWLDO

GL WHUW %XW\O S FUHVRO  
 3DUWLWLRQ FRHIILFLHQW Q RFWDQRO ZDWHU /RJ .RZ  
 %&)

;\OHQH  
 3DUWLWLRQ FRHIILFLHQW Q RFWDQRO ZDWHU  
 %&)



'58 & .) \$5 % ( 1 + ( // \$ 6 6 \$  
 . 5 \$ ) 7 0 ( 7 \$ / 35 , 0 ( 5

(1  
 5YLVLQR QU  
 'DWHG  
 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 (FRORJLFDQ LQIRUPDWLRQ

=LQF 2[LGH  
 %& ) !  
 \$FHWRQH  
 3DUWLWLRQ FRHIILFLHQW Q RFWDQRO ZDWHU  
 %& )  
 Q %XW\O \$FHWDWH  
 3DUWLWLRQ FRHIILFLHQW Q RFWDQRO ZDWHU  
 0RELOLW\ LQ VRLO  
 ,QIRUPDWLRQ QRW DYDLODEOH

5HVXOWV RI 3%7 DQG Y3Y% DVVHVPHQW  
 2Q WKH EDLVV RI DYDLODEOH GDWD WKH SURGXFW GRHV QRW FRQWDLQ DQ\ 3%7 RU Y3Y% L  
 (QGRFULQH GLVUXSWLQJ SURSHUWLHV  
 %DVHG RQ WKH DYDLODEOH GDWD WKH SURGXFW GRHV QRW FRQWDLQ VXEVDQFHV OLVWH  
 GLVUXSWRUV ZLWK HQYLURQPHQWDO HIIHFWV XQGHU HYDOXDWLRQ  
 2WKHU DGYHUVH HIIHFWV  
 ,QIRUPDWLRQ QRW DYDLODEOH

6 (& 7, 21 'LVSRVDO FRQVLGHUDWLRQV

:DVWH WUHDWPHQW PHWKRGV  
 5HXVH ZKHQ SRVVLEOH 3URGXFW UHVLGXHV VKRXOG EH FRQVLGHUHJ VSHFLDO KDJDUGRXV  
 VKRXOG EH HYDOXDWHG DFFRUGLQJ WR DSSOLFDEOH UHJXODWLRQV  
 'LVSRVDO PXVW EH SHUIRUPHG WKURXJK DQ DXWKRULVHG ZDVWH PDQDJHPHQW ILUP LQ FR  
 :DVWH WUDQVSRUWDWLRQ PD\ EH VXEMHFW WR \$'5 UHVWULFWLRQV  
 & 217\$0,1\$7(' 3\$&.\$\*,1\*  
 & RQWDPLQDWHG SDFNDJLQJ PXVW EH UHFRYHUHG RU GLVSRVHG RI LQ FRPSOLDQFH ZLWK Q

6 (& 7, 21 7UDQVSRUW LQIRUPDWLRQ

81 QXPEHU RU , ' QXPEHU  
 \$'5 5, ' ,0'\* , \$7\$ 81  
 81 SURSHU VKLSSLQJ QDPH  
 \$'5 5, ' 3\$,17 RU 3\$,17 5(/\$7(' 0\$7(5,\$/  
 ,0'\* 3\$,17 RU 3\$,17 5(/\$7(' 0\$7(5,\$/  
 , \$7\$ 3\$,17 RU 3\$,17 5(/\$7(' 0\$7(5,\$/

7UDQVSRUW KDJDUG FODVV HV  
 \$'5 5, ' &ODVV /DEHO  
 ,0'\* &ODVV /DEHO  
 , \$7\$ &ODVV /DEHO



3DFNLQJ JURXS  
 \$'5 5, ' ,0'\* , \$7\$ , , ,



'58 & .) \$5 % ( 1 + ( // \$ 6 6 \$  
 .5 \$ ) 7 0 ( 7 \$ / 35 , 0 ( 5

5 YLVLQR QU (1  
 'DWHG  
 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6 (& 7, 21 7UDQVSRUW LQIRUPDWLRQ

(QYLURQPHQWDO KD]DUGV

\$'5 5,' (QYLURQPHQWDOO\ +D]DUGRXV



,0'\* 0DULQH 3ROOXWDQW



, \$7\$ 12

)RU \$LU WUDQVSRUW HQYLURQPHQWDOO\ KD]DUGRXV PDUN LV RQO\ PDQGDWRU\ IRU 81

6SHFLDO SUHFDXWLRQV IRU XVHU

\$'5 5,' +,1 .HPOHU /LPLWHG 4XDQWLWLHV / 7XQQHO UHVWULFW

6SHFLDO SURYLVLQR

,0'\* (06 ) ( \_6 ( /LPLWHG 4XDQWLWLHV /

, \$7\$ &DUJR 0D]LPXP TXDQWLW\ / 3DFNDJLQJ LQVWUXFW

3DVVHQJHUV 0D]LPXP TXDQWLW\ /

3DFNDJLQJ LQVWUXFW

6SHFLDO SURYLVLQR \$ \$

0DULWLPH WUDQVSRUW LQ EXON DFFRUGLQJ WR ,02 LQVWUXPHQWV

,QIRUPDWLRQ QRW UHOHYDQW

6 (& 7, 21 5HJXODWRU\ LQIRUPDWLRQ

6DIHW\ KHDOWK DQG HQYLURQPHQWDO UHJXODWLRQV OHJLVODWLRQ VSHFLILF IRU WKH

6HYHVR &DWHJRU\ 'LUHFWLYH ( 3 F (

5HVWULFWLRQV UHODWLQJ WR WKH SURGXFW RU FRQWDLQH VXEVDQFHV SXUVXDQW WR

3URGXFW

3RLQW

&RQWDLQH VXEVDQFH

3RLQW

5HJXODWLRQ (8 RQ WKH PDUNHWLQJ DQG XVH RI H[SORVLYHV SUHFXUVRU

QRW DSSOLFDEOH

6XEVDQFHV LQ &DQGLGDWH /LVW \$UW 5(\$&+

2Q WKH EDVLV RI DYDLODEOH GDWD WKH SURGXFW GRHV QRW FRQWDLQ DQ\ 69+& LQ SHUF

6XEVDQFHV VXEVDQW WR DXWKRULVDWLRQ \$QQH[ ;,9 5(\$&+

1RQH

6XEVDQFHV VXEVDQW WR H[SRUWDWLRQ UHSRUWLQJ SXUVXDQW WR 5HJXODWLRQ (8

1RQH

6XEVDQFHV VXEVDQW WR WKH 5RWWHUGDP &RQYHQWLRQ

1RQH

6XEVDQFHV VXEVDQW WR WKH 6WRFNKROP &RQYHQWLRQ

1RQH

+HDWKFDUH FRQWUROV

:RUNHUV H[SRVHG WR WKLW FKHPLFDO DJHQW PXVW QRW XQGHUJR KHDOWK FKHFNV SURYLQ

UHODWHG WR WKH ZRUNHUV KHDOWK DQG VDIHW\ DUH PRGHV DQG WKDW WKH (& GLU

&KHPLFDO VDIHW\ DVVHVPHQW

\$ FKHPLFDO VDIHW\ DVVHVPHQW KDV QRW EHHQ SHUIRUPHG IRU WKH SUHSDUDWLRQ IRU W



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5\$YLVLRQ QU (1  
 'DWHG  
 3ULQWHG RQ  
 3DJH Q  
 5HSODFHG UHYLVLRQ 'DWHG

6(&7,21 2WKHU LQIRUPDWLRQ

7H[W RI KD]DUG + LQGLFDWLRQV PHQWLRQHG LQ VHFWRU RI WKH VKHHW

)ODP /LT )ODPPDEOH OLTXLG FDWHJRU\  
 )ODP /LT )ODPPDEOH OLTXLG FDWHJRU\  
 \$FXWH 7R[ \$FXWH WR[LFLW\ FDWHJRU\  
 \$VS 7R[ \$VSLUDWLRQ KD]DUG FDWHJRU\  
 6727 5( 6SHFLILF WDUJHW RUJDQ WR[LFLW\ UHSHDWHG H[SRVXUH FDWHJRU\  
 (\H ,UULW (\H LUULWDWLRQ FDWHJRU\  
 6NLQ ,UULW 6NLQ LUULWDWLRQ FDWHJRU\  
 6727 6( 6SHFLILF WDUJHW RUJDQ WR[LFLW\ VLQJOH H[SRVXUH FDWHJRU\  
 \$TXDWLF \$FXWH +D]DUGRXV WR WKH DTXDWLF HQYLURQPHQW DFXWH WR[LFLW\ FDWHJRU\  
 \$TXDWLF &KURQLFD]DUGRXV WR WKH DTXDWLF HQYLURQPHQW FKURQLF WR[LFLW\ FDWHJRU\  
 \$TXDWLF &KURQLFD]DUGRXV WR WKH DTXDWLF HQYLURQPHQW FKURQLF WR[LFLW\ FDWHJRU\  
 \$TXDWLF &KURQLFD]DUGRXV WR WKH DTXDWLF HQYLURQPHQW FKURQLF WR[LFLW\ FDWHJRU\  
 + +LJKO\ IODPPDEOH OLTXLG DQG YDSRXU  
 + )ODPPDEOH OLTXLG DQG YDSRXU  
 + +DUPIXO LQ FRQWDFW ZLWK VNLQ  
 + +DUPIXO LI LQKDOHG  
 + 0D\ EH IDWDO LI VZDOORZHG DQG HQWHUV DLUZD\V  
 + 0D\ FDXVH GDPDJH WR RUJDQV WKURXJK SURORQJHG RU UHSHDWHG H[SRVXUH  
 + &DXVHV VHULRXV H\H LUULWDWLRQ  
 + &DXVHV VNLQ LUULWDWLRQ  
 + 0D\ FDXVH UHVSUDWRU\ LUULWDWLRQ  
 + 0D\ FDXVH GURZVLQHV RU GL]]LQHVV  
 + 9HU\ WR[LF WR DTXDWLF OLIH  
 + 9HU\ WR[LF WR DTXDWLF OLIH ZLWK ORQJ ODVWLQJ HIIHFW  
 + 7R[LF WR DTXDWLF OLIH ZLWK ORQJ ODVWLQJ HIIHFW  
 + +DUPIXO WR DTXDWLF OLIH ZLWK ORQJ ODVWLQJ HIIHFW  
 (8+ 5HSHDWHG H[SRVXUH PD\ FDXVH VNLQ GU\QHV RU FUDFNLQJ

/(\*(1'  
 \$'5 (XURSHDQ \$JUHHPHQW FRQFHUQLQJ WKH FDUULDJH RI 'DQJHURXV JRRGV E\ 5RDG  
 \$7( \$FXWH 7R[LFLW\ (VWLPDWH  
 &\$6 &KHPLFDO \$EVWUDFW 6HUULFH 1XPEHU  
 &( (IIHFWLYH FRQFHQWUDWLRQ UHTXLHG WR LQGXFH D HIIHFW  
 &( ,GHQWLILHU LQ (6,6 (XURSHDQ DUFKLYH RI H[LVWLQJ VXEVWDQFHV  
 &/3 5HJXODWLRQ (&  
 '1(/ 'HULYHG 1R (IIHFW /HYHO  
 (P6 (PHUJHQF\ 6FKHG XOH  
 \*+6 \*OREDOO\ +DUPRQL]HG 6\VVHP RI FODVVILFDWLRQ DQG ODEHOLQJ RI FKHPLFDOV  
 ,,\$7\$ '\*5 ,QWHUQDWLRQDO \$LU 7UDQVSRUW \$VVRFDWRQ 'DQJHURXV \*RRGV 5HJXODWLRQ  
 ,& ,PPELOL]DWLRQ &RQFHQWUDWLRQ  
 ,0'\* ,QWHUQDWLRQDO 0DULWLPH &RGH IRU GDQJHURXV JRRGV  
 ,02 ,QWHUQDWLRQDO 0DULWLPH 2UJDQL]DWLRQ  
 ,1'(; ,GHQWLILHU LQ \$QQH[ 9, RI &/3  
 /& /HWKDO &RQFHQWUDWLRQ  
 /' /HWKDO GRVH  
 2(/ 2FFXSDWLRQDO ([SRVXUH /HYHO  
 3%7 3HUVLVWHQW ELRDFFXPXODWLYH DQG WR[LF  
 3(& 3UHGLFWHG HQYLURQPHQWDO &RQFHQWUDWLRQ  
 3(/ 3UHGLFWHG H[SRVXUH OHYHO  
 307 3HUVLVWHQW PRELOH DQG WR[LF  
 31(& 3UHGLFWHG QR HIIHFW FRQFHQWUDWLRQ  
 5(\$&+ 5HJXODWLRQ (&  
 5,' 5HJXODWLRQ FRQFHUQLQJ WKH LQWHUQDWLRQDO WUDQVSRUW RI GDQJHURXV JRRGV E\  
 7/9 7KHUVKROG /LPLW 9DOXH  
 7/9 &(,/,1\* &RQFHQWUDWLRQ WKDW VKRXOG QRW EH H[FHHGHG GXULQJ DQ\ WLPH RI RFFXS  
 7:\$ 7LPH ZHLJKWHG DYHUDJH H[SRVXUH OLPLW  
 7:\$ 67(/ 6KRUW WHUP H[SRVXUH OLPLW  
 92& 9RODWLOH RUJDQLF &RPSRXQGV  
 Y3Y% 9HU\ SHUVLVWHQW DQG YHU\ ELRDFFXPXODWLYH  
 Y3Y0 9HU\ SHUVLVWHQW DQG YHU\ PRELOH  
 :\* :DWHU KD]DUG FODVVHV \*HUPDQ

\*(1(5\$/ % ,% /, 2\*5\$3+<



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.5\$)7 0(7\$/ 35,0(5

5YLVLRQ QU  
'DWHG  
3ULQWHG RQ  
3DJH Q  
5HSODFHG UHYLVLRQ 'DWHG

(1

6(&7,21 2WKHU LQIRUPDWLRQ

5HJXODWLRQ (& 5(\$&+ RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (& &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 ,, \$QQH[ RI 5(\$&+ 5HJXODWLRQ  
5HJXODWLRQ (& , \$WS &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 ,, \$WS &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 ,, \$WS &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 ,9 \$WS &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 9 \$WS &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 9, \$WS &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 9,, \$WS &/3 RI WKH (XURSHDQ 3DUOLDPHQW  
5HJXODWLRQ (8 ; \$WS &/3  
5HJXODWLRQ (8 ; \$WS &/3  
5HJXODWLRQ (8 ;, \$WS &/3  
5HJXODWLRQ (8 ;,, \$WS &/3  
'HOHJDWHG 5HJXODWLRQ 8( ;,, \$WS &/3  
5HJXODWLRQ (8  
'HOHJDWHG 5HJXODWLRQ 8( ;,9 \$WS &/3  
'HOHJDWHG 5HJXODWLRQ 8( ;9 \$WS &/3  
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'HOHJDWHG 5HJXODWLRQ 8( ;9,, \$WS &/3  
'HOHJDWHG 5HJXODWLRQ 8( ;9,, \$WS &/3

7KH 0HUFN ,QGH[ WK (GLWLRQ  
+DQGOLQJ &KHPLFDO 6DIHW\  
,156 )LFKH 7R[LFRORJLTXH WR[LFRORJLFDO VKHHW  
3DWW\ ,QGQVWULDO +\JLHQH DQG 7R[LFRORJ\  
1 , 6D[ 'DQJHURXV SURSHUWLHV RI ,QGQVWULDO 0DWHULDOV (GLWLRQ  
,) \$\*(67,6 ZHEVLWH  
(&+\$ ZHEVLWH  
'DWDEDVH RI 6'6 PRGHV IRU FKHPLFDOV 0LQLVWU\ RI +HDOWK DQG ,66 ,VWLWXWR 6XSH

1RWH IRU XVHUV

7KH LQIRUPDWLRQ FRQWDLQHG LQ WKH SUHVHQW VKHHW DUH EDVHG RQ RXU RZQ NQRZOHGJ.  
VXLWDELOLW\ DQG WKRURXJKQHVV RI SURYLGHG LQIRUPDWLRQ DFFRUGLQJ WR HDFK VSHFLI  
7KLV GRFXPHQW PXVW QRW EH UHJDUGHG DV D JXDUDQWHH RQ DQ\ VSHFLILF SURGXFW SURS  
7KH XVH RI WKLV SURGXFW LV QRW VXEMHFW WR RXU GLUHFV FRQWURO WKUHIRUH XVHU  
DQG VDIHW\ ODZV DQG UHJXODWLRQV 7KH SURGXFWU LV UHOLHYHG IURP DQ\ OLDELOLW\ DU  
3URYLGHG DSSRLQWHG VWDII ZLWK DGHTXDWH WUDLQLQJ RQ KRZ WR XVH FKHPLFDO SURGXFW

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&KHPLFDO DQG SK\VLFO KD]DUGV 3URGXFV FODVVLILFDWLRQ GHULYHV IURP FULWHUL D HV  
HYDOXDWLRQ RI FKHPLFDO SK\VLFO SURSHUWLHV DUH UHSRUWHG LQ VHFWRQ  
+HDOWK KD]DUGV 3URGXFV FODVVLILFDWLRQ LV EDVHG RQ FDOFXODWLRQ PHWKRGV DV SH

(QYLURQPHQWDO KD]DUGV 3URGXFV FODVVLILFDWLRQ LV EDVHG RQ FDOFXODWLRQ PHWKRGV  
6HFWLRQ

&KDQJHV WR SUHYLRXV UHYLHZ  
7KH IROORZLQJ VHFWRQV ZHUH PRGLLHG