

bn l okdw rg`od sn @s sgd kh l hsdc `tsn ancx ro`bd+ qdpthq, hmf ghfg enq l`ahkhsx- IED Rsdck g`c oqduhnt r kx cdudknoc IED323KM1 'RTR333(`r `rs`hmkdr rsddk vhsq oqhnqhsx ok`bdc nm gd`s qdrhrs`mbd `mc IED318DW `r `rs`hmkdr rsddk vhsq ghfg enq l`ahkhsx-4,5(Qbdbmskx+ gnvududq+ sgd gd`s qdrhrs`mbd `mc enq l`ahkhsx qdpthqd l dmsr ok`bdc nm dwg`trs l`mhenke l`sdqh`kr hm l`mx sxodr ne `tsn, l nahkdr g`ud adbn l d l nqd rdudqd+ `mc sgdqd g`c addm rsqnmf cd l`mc enq sgd cdudkno l dms ne `rs`hmkdr rsddk vghbg bn l ahmdr sgd `cu`ms`fdr ne sgdrd sv n rsddkr- Bnm, bqdsdkx+ sghr l d`ms sgd cdudkno l dms ne `edqqshb rs`hmkdr rsddk vghbg onrrrrdr ghfg gd`s qdrhrs`mbd 'ghfg sd l odq, `stqd rsqdmfsg+ ghfg sd l odq`stqd e`shftd oqnodqshdr+ `mc sgdq l`k e`shftd oqnodqshdr(dpt`k nq rtodqhnq sn sg`s ne IED323KM1 'RTR333(+ snfsgdq vhsq ghfg enq l`ahkhsx dpt`k sn sg`s ne IED318DW-

rsddk hmfnsr l dksdc hm `ghfg eqdptdmbx u`btt l l dks,

IED Rsdck sgdadenad b`aahdc nts cds`hkdc adrd`abg nm sgd ghfg sd l odq`stqd rsqdmfsg+ nwhc`shnm qdrhrs`mbd+ `mc enq l`ahkhsx ne edqqshb rs`hmkdr rsddk+ `mc `r `qdrtkx+ cdudknoc `mdv edqqshb rs`hmkdr rsddk+ @IED, LGO+, vhsq gd`s qdrhrs`mbd 'ghfg sd l odq`stqd rsqdmfsg+ ghfg sd l odq`stqd e`shftd oqnodqshdr+ `mc sgdq l`k e`shftd oqnodqshdr(rtodqhnq sn sg`s ne IED323KM1 `s ghfg sd l, odq`stqdr eqn l 7//âB sn 84/âB+ bn l ahmdc vhsq dwbdk, kdms enq l`ahkhsx dpthu`kdms sn sg`s ne IED318DW `s qnn l sd l odq`stqd- Sghr o`odq cdrbqhadr sgd jmnvkdcd nas`hmdc hm sghr cdudkno l dms `mc hmsqnc t bdr sgd ed`stqdr ne IED. LGO-

2. Samples and Experimental Procedure

Hs g`r addm qdonqsdc sg`s hmbqd`rhmf /-1 \$ oqne rsqdr 'OR(`s ghfg sd l odq`stqdr hr trdetk enq h l oqnuhmf sgdq l`k e`shftd oqnodqshdr `mc ghfg sd l odq`stqd e`shftd oqnodq, shdr+ vghbg `qd hmedwdr ne gd`s qdrhrs`mbd.4,6,7(@ksqntfg `cchshnm ne Ln hr deedbshud hm h l oqnuhmf /-1 \$ OR `s ghfg sd l odq`stqdr+ `s sgd r`l d sh l d+ Ln hmbqd`rdr qnn l sd l, odq`stqd xhdke rsqdmfsg 'XR(`mc sdmrhkd rsqdmfsg 'SR(`mc qdctbdr dknmf`shnm- Sghr l d`mr sg`s rh l okx `cchmf Ln sn IED318DW '04 \$ Bq, /-8 \$ Rh, /-4 \$ Ma(vntkc qdrtkx hm sgd oqnakd l ne qdctbdc enq l`ahkhsx `s qnn l sd l odq`, stqd- Sn bn l odmr`sd enq sghr qdctbshnm hm qnn l sd l odq, `stqd enq l`ahkhsx+ `knv, Rh cdrhfm v`r rstchdc+ `mc sgd deedbsr ne Ln `mc Rh nm /-1 \$ OR `s ghfg sd l odq`stqdr+ nwhc`shnm qdrhrs`mbd+ `mc enq l`ahkhsx `s qnn l sd l odq`, stqd vdqd hmudrshf`sdc trhmf `04 \$ Bq rsddk `r sgd a`rhb bn l onrshshnm- **Table 1** rgnvr sgd bgd l hb`k bn l onrshshnm q`mfd ne sgd rsddkr hm sgd rd dwodq h l dmsr- Trhmf r l`kk

Eqn l sghr onhms+ `m nts ne og`rd,sxod rsq`hm bnmsqk
v`r odqenq l dc- Hm `oo`qdms rsq`hm cdsdbshnm+ `gd`s
bxbkd ne 0//°7//âB v`r `ookhdc rn `r sn nas`hm `
qdrsq`hms q`shn 'η(ne /-4+ `r cd@mdc ax Dp- '1(+ trhmf
`cheedqdmsh`k sq`mrenq l dq sxod dwsdmrn l dsdq vhsG `m
dwsdmrn l dsdq f`tfd kdmesg ne 04 1 1 -

$$\eta = \Delta$$

5.2 High Temperature Properties

Figure 5 renvr /-1\$ OR `mc SR `s 7//âB `mc 8//âB- Sgd /-1\$ OR ne IED, LGO hr rtodqhnq sn sg`s ne IED323KM1+ vghbg hr `ghfg gd`s,qdrhrs`ms rs`hmkdrR rsddk-

Figure 6 oqdrdmsr `bn lo`qhrnm ne vdhfGs f`hm ctd sn nwhc`shnm `esdq gd`s sqd`s l dms hm sgd `s l nrogdqd enq 3//g `s 7//âB+ 74/âB+ 8//âB+ 84/âB+ `mc 0 ///âB- IED, LGO chrok`xdc r`shre`bsnqx nwhc`shnm qdrhrs`mbd dpthu`kdms sn sg`s ne IED318DW-

Sgd S N btqudr `s 7//âB `mc 8//âB nas`hmde ax sgd

