LIST ABBREVIATIONS AND SYMBOLS USED

AF-CNT	Amine-functionalized carbon nanotube
AF-GO	Amine-functionalized graphene oxide
APTMS	(3-Aminopropyl)trimethoxysilane
ATPEG	3-aminopropyl-terminated poly (ethylene glycol)
BDA	1,4-butane diamine
bis-MPA	2,2-Bis(hydroxyl methyl)-propionic acid
C1	One-carbon building block
cm	Centimeter
CCLAY	Cyclic carbonate functionalized of clay
$CDCl_3$	Deuterated chloroform
CHPE	Highly branched cyclic carbonates
CL	Cyclic limonene dicarbonate
CNT	Carbon nanotubes
CO_2	Carbon dioxide
Corr. rate	Corrosion rate
CSBO	Carbonated soybean oil
CSFO	Carbonated sunflower oil
CTAN	Carbonated tannic acid
DA10	Decane diamine
DB	Degree of branching
DABCO	1,4-diazabicyclo[2.2.2]octane
DBU	1,8-Diazabicyclo[5.4.0]undec-7-ene
DBTDL	Dibutyltin dilaurate
DADI	Dianisidine diisocyanate
DADO	1,12- dodecane diamine
DETA	Diethylenetriamine
DETDC	Diethyltin dicaprylate
DI	Distilled water
DMC	Dimethyl carbonate
H_2O_2	Hydrogen peroxide
ECO	Epoxidized castor oil
EJO	Epoxidized jatropha oil

EEW	Epoxy equivalent weight
ELO	Epoxidized linseed oil
EO-TMPGC	Ethoxylated trimethylolpropane polyglycidylether
EEP	Ethyl 3-ethoxypropionate
ESO	Epoxidized soybean oil
ESS	Epoxidized sucrose soyate
ETAN	Epoxidized tannic acid
FT-IR	Fourier transform infrared spectroscopy
GO	Graphene oxide
GPTMS	3-Glycidoxypropyl trimethoxy silane
H_2SO_4	Sulphuric acid
HCl	Hydrochloric acid
HCOOH	Formic acid
HDI	Hexamethylene diisocyanate
HHPE	Hydroxyl terminated highly branched polyester
HMDA	1,6-hexamethylene diamine
H-NIPU	Hybrid NIPU
HUM	Hydroxyurethane modifier
HV	Hydroxyl value
IV	Iodine value
I_{corr}	Corrosion current density
IPDA	Isophorone diamine
IPDI	Isophorone diisocyanate
kg	Kilogram
$KMnO_4$	Potassium permanganate
MA	Maleic anhydride
MDI	Methylene diphenyl diisocyanate
MHz	Mega hertz
MPa	Mega Pascal
MPDI	1, 3 Phenylene diisocyanate
mg	Milligram
MC	Montmorillonite nanoclay
mL	Milliliter

MWCNT	Multi walled carbon nanotube
mmpy	millimetres per year
mv	millivolt
Na_2SO_4	Sodium sulfate
$NaHCO_3$	Sodium bicarbonate
NaCl	Sodium chloride
NaOH	Sodium hydroxide
NIPUs	Non-isocyanate polyurethanes
NMR	Nuclear magnetic resonance
PA	Phthalic anhydride
PHU	Poly(hydroxyurethane)
p-TSA	P-toluene sulfonic acid
ppm	Parts per million
REACH	Registration, Evaluation, Authorisation and Restriction Of Chemical
ROP	Ring opening polymerization
RB flask	Round bottom flask
SEM	Scanning electron microscopy
SWCNTs	Single walled nanotubes
SYR	Syringaresinol
T_d	Degradation temperatures,
Tg	Glass transition temperatures
TBABr	Tetrabutylammonium bromide
TBD	Triazabicyclodecene
TDI	Toluene diisocyanate
TEA	Triethylamine
TGA	Thermogravimetric analysis
THF	Tetrahydrofuran
TMPGC	Trimethylolpropane polyglycidylether
TMS	Tetramethyl silane
TREN	Tris(2-aminoethyl)amine
UTM	Universal testing machine
XRD	X-ray diffraction
ZnO	Zinc oxide
µm	Micro meter

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