



ECMA/TC38-TG3/2015/026 (Rev. 1 – 15 April 2015)

## Annex B2 - Product environmental attributes Notebooks and Tablets

The declaration may be published only when all rows and/or fields marked with \* are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P15.

Brand *	Lenovo	Logo	
Company name *	Lenovo		
Contact information *	Lenovo Global Environmental Affairs	OBOVO	
e-mail address	Alvin L Carter	Lenovo	
	alcarter@lenovo.com		
Internet site *	nttps://www.lenovo.com/us/en/about/sustainability		
Additional information	The latest version of this document can be found at: http://www.	lenovo.com/ecodeclaration	

The company declares (based on product specification or test results based obtained from sample testing), that the product conforms to the statements given in this declaration.				
Type of product *	Notebook			
Commercial name *	Lenovo 14e Chromebook Gen 2, IdeaPad 3 Chrome 14APO6			
Model number *	82M1,82M2,82MY			
Issue date *	2021/04/30			
Intended market *	☐ Global ☐ Europe ☐ Asia, Pacific & Japan ☐ Americas ☐ Other			
Additional information				

This is an uncontrolled copy when in printed form. Please refer to the contact information for the latest version.

### About Annex B2

Annex B2 reflects Product environmental attributes relevant for Computers and Computer Monitors. The following items from the ECMA-370 Main body are not shown in the template:

P4.1 – P4.3 Consumable materials

P9.1 TEC and Print speed

P10.2 - P10.3 Chemical emissions from printing products

P11.1 - P11.3 Consumable materials for printing products

Model number *		82M1,82M2,82MY	Logo	Lend	21/0	
Issue date	) *	2021/04/30		LEIK		TH.
Product	environ	mental attributes - Legal requirements		Require	ment	met
Item				Yes	No	n.a.
P1		ous substances and preparations				
P1.1*		s do comply with current European RoHS Directive. (See legal reference and NOTE	EB1)	$\boxtimes$		
P1.2*		s do not contain Asbestos (see legal reference). nt: Legal reference has no maximum concentration value.		$\boxtimes$		
P1.3*		s do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC),		$\square$		
	hydrobro trichloroe concentr	omofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrach ethane, methyl bromide (see legal reference). Comment: Legal reference has no m ration values.	aximum			
P1.4*		s do not contain more than; 0,005% polychlorinated biphenyl (PCB), 0,005% polych l (PCT) in preparations (see legal reference).	lorinated			
P1.5*	Products	s do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 carb ntaining at least 48% per mass of chlorine in the SCCP (see legal reference).	oon atoms in th	ne 🔀		
P1.6*	Parts wit	th direct and prolonged skin contact do not release nickel in concentrations above 0 al reference). nt: Max limit in legal reference when tested according to EN1811:2011-5.	,5 μg/cm²/wee	k 🔀		
P1.7*	REACH	Article 33 information about substances in articles is available at (add URL or mail www.lenovo.com/us/en/Lenovo-REACH-SVHC-Disclosure	contact):			
P2	Batterie					
P2.1*		educt contains a battery or an accumulator, the battery/accumulator is labeled with t Information on proper disposal is provided in user manual. (See legal reference)	he disposal			
P2.2*	Batteries	s or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadme)	nium. (See lega	al 🔀		
P2.3*	Batteries	and accumulators are readily removable. (See legal reference)		$\square$		
P3	Conforn	nity verification & Eco design (ErP)				
P3.1*	The Dec	duct is CE-marked to show conformance with applicable legal requirements (see legal legal requirements) (see legal laration of Conformity can be requested at (add link or e-mail address):  www.lenovo.com/us/en/compliance/eu-doc for EU and  www.lenovo.com/us/en/compliance/uk-doc for UK	gal reference).			
P3.2*	The prod	duct complies with the Eco design requirements for energy-related products, al reference).		$\boxtimes$		
	Required	d information is;				
P5		packaging				
P5.1*		ng and packaging components do not contain more than 0,01% lead, mercury	/. cadmium a	nd 🔀		
	hexavale	ent chromium by weight of these together.				
P5.2*	used (se	kaging materials are marked with abbreviations and numbers indicating the nature on the legal reference).				
P5.3*	(see lega	duct packaging material is free from ozone depleting substances as specified in the N al reference). nt: Legal reference has no maximum concentration values.	Montreal Protoc	ol 🔀		
P6		nt information				
		on for recyclers/treatment facilities is available (see legal reference).				

NOTE B1 Restriction applies to the homogeneous material, unless other specified and expressed in weight %. Stating "Yes" means that the product is compliant with the mandatory requirements.

Model nu	ımber "	82M1,82M2,82MY	Logo	Lend	240	
Issue dat	:e *	2021/04/30		Len		TH.
Product		mental attributes - Market requirements (See General NOTE GN l	,	Requirer	nent r	net
Item	*=manda	tory to fill in. Additional information regarding each item may be found under P14.		Yes	No	n.a.
P7		Disassembly, recycling				
P7.1*	Parts tha	nt have to be treated separately are easily separable		$\boxtimes$		
P7.2*	Plastic m	naterials in covers/housing have no surface coating.				
P7.3*	Plastic p	arts > 100 g consist of one material or of easily separable materials.		$\boxtimes$		
P7.4*	Plastic p	arts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.		$\boxtimes$		
P7.5	Plastic p	arts are free from metal inlays or have inlays that can be removed with commonly a	vailable tools.		$\boxtimes$	
P7.6*	Labels a	re easily separable. (This requirement does not apply to safety/regulatory labels).		$\boxtimes$		
	Product					
P7.7*	Upgradir	ng can be done e.g. with processor, memory, cards or drives				
P7.8*	Upgradir	ng can be done using commonly available tools		$\boxtimes$		
P7.9	Spare pa	arts are available after end of production for: 5 years				
P7.10		s available after end of production for: 5 years				
		and substance requirements				
P7.11*		cover/housing material type (e.g. plastics, metal, aluminum):				
P7.12		type: <i>plastic</i> Material type: <i>Metal</i> Material n materials of external electrical cables are PVC free.	и туре:		$\square$	$\overline{}$
P7.13		n materials of external electrical cables are PVC free.			$\stackrel{\square}{\vdash}$	H
P7.14		plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bi	romine and 0.10	<u> </u>	<del> </del>	$\blacksquare$
7.14	weight (* polyvinyl	phasic cashigrover parts > 23 g contain to find entail 0,1 % weight (1000 ppm) of 1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in 25% post-consumer recycled content.	e retardants, an	d		
P7.15		ircuit boards, PCBs (without components) are low halogen: all 🔀 PCBs > 25 g 🔲 ed in IEC 61249-2-21. (See 1NOTE B2)	are low haloge	n 🗌		
P7.16	Marking:	tarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: >PC+ABS-TD15FR(40)<				
P7.17		nemical specifications of flame retardants in printed circuit boards > 25 g (without co				
		PA (additive),	orohydrin,	$\boxtimes$		
	Alt. 2: Chaccordin	nemical specifications of flame retardants in printed circuit boards (without compone g ISO 1043-4:	ents) > 25 g			
P7.18	concentr 1. Chem	ame retarded plastic parts > 25 g contain the following flame retardant substance ations above 0,1%: ical name: , CAS #: (See NOTE B4) ical name: , CAS #: "	s/preparations i	n 🗌		
		ical name: , CAS #: " nemical specifications of flame retardants in plastic parts > 25 g according ISO 1043	3-4: <b>FR(40)</b>			
P7.19	-	parts > 25 g, flame retardant substances/preparations above 0,1% are used which	have been		$\boxtimes$	
	•	I the following Risk phrases; and Hazard statements:				
			ee note B5)			
P7.20*	Postcons	sumer recycled plastic material content is used in the product (See Note B6):				
	a) Of t a pe	It least one of the two alternatives below shall be answered; otal plastic parts' weight > 25 g, the postconsumer recycled plastic material contenercentage of total plastic by weight) is 3.2%.  • weight of recycled material is 13.4 g.	t (calculated as			

GENERAL NOTE Standard references should direct to the latest version of a standard. If an older version of a standard is used, section P15 shall be used for explanation.

NOTE B2 IEC 61249-2-21 defines maximum limits of 900 ppm for each of the substances chlorine and bromine and a maximum limit of 1500ppm of these substances combined. The standard does not address fluorine, iodine and astatine which are included in the group of halogens.

NOTE B3 and B4 A Guidance document on Chemical substances is available; see <a href="http://www.ecma-international.org/publications/standards/Ecma-370.htm">http://www.ecma-international.org/publications/standards/Ecma-370.htm</a>

NOTE B5 If a certain substance has been assigned a certain risk phrases / hazard statement in the referenced source, this does not necessarily mean the substance has been tested for all of the hazards referred to by a certain customer.

NOTE B6 Applies to a product containing plastic parts whose combined weight exceeds 100 g with the exception of printed circuit boards, cables, connectors and electronic components and bio-based plastic material.

Model number *	82M1,82M2,82MY	Logo	Len	01/0	
Issue date *	2021/04/30		Len		V <sub>TM</sub>
Product environn	nental attributes - Market requirements (continued)		Requir	emen	t met
Item			Yes	No	n.a.

D7.04*		stance requirements		OTE D7)			
P7.21*	Biobased plastic n	naterial content is use	d in the product (See No	OTE B7):			
		c parts' weight > 25 g	es below shall be answe , the biobased plastic m		ited as a percentage of		
	or b) The weight of	f the biobased plastic	material is g.				
P7.22*			less than 0,1 mg/lamp.		ΧП		
		specify: Number of la	mps: and maxim	um mercury content pe			
P8	Batteries						
P8.1*		composition: Li-polym	er				
<b>P9</b>		nsumption (See NOTE B8) duct the following power levels or energy consumptions are reported:					
Energy mo		e * Power level at Power level at Power level at 100 V AC 115 V AC 230 V AC Reference/Standard for energy modes and test method *					
Peak (On-	max)	45 W	45 W	45 W	Full load		
Categor	<u>y 1</u>						
Short Idle Enabled	State - WOL	4.07 W	3.99 W	4.23 W	Use for ENERGY STAR V8 registration		
Long Idle Enabled	State - WOL	3.44 W	3.39 W	3.41 W	Use for ENERGY STAR V8 registration		
Sleep (S3) - WOL Disabled		0.35 W	0.34 W	0.37 W	Use for ENERGY STAR V8 registration		
Off (S5) - WOL Disabled		0.18 W	0.18 W	0.2 W	Use for ENERGY STAR V8 registration		
EPS No-loa (External power s	ad supply / charger plugged in the connected from the product.)	0.036 W	0.04 W	0.08 W			
TEC *		kWh/week	kWh/week	kWh/week			
Typical Ene	ergy Consumption	W	W	14/			
	ergy Consumption	VV	VV	W		$\boxtimes$	
ETEC *	ergy Consumption	<b>15.18</b> kWh/year	<b>14.89</b> kWh/year	<b>15.68</b> kWh/year	E <sub>TEC</sub> = (8760/1000) x (P <sub>off</sub> x 0.25 + P <sub>sleep</sub> x 0.35 + P <sub>long_idle</sub> x 0.10+ P <sub>short idle</sub> x 0.30)		
		Poff: Off Mode(S5) - W	OL Enabled; P <sub>sleep</sub> : Sleep	Mode(S3) - WOL Enable	ed; Pidle: Idle State - WOL Enabled		
	1,	,	I Efficiency Marking Pro	otocol) * : VI			
Display res	olution * : 2.07 meg	gapixels			1920*1080		
Default time	e to enter energy sa	ave mode: 8.5 minutes	;				
P9.2*	Information about	the energy save funct	ion is provided with the	product.			
P9.3	Energy efficiency	class (monitors only):					
P10	Emissions						
			o ISO 9296 (See NOTE				
P10.1		Mode description			it A-weighted sound power level, $L_{WA,c}$	(B)	
		Idle mode		* 2.6		<u> </u>	
	Operation *	Operating (CPU)	d management (-IB) :	* 2.5			
			ad pressure level (dB) $L_{p m Am}$				
	Other mode		nd pressure level (dB) $L_{p{\sf Am}}$	18 (operator position	on desktop – operating)		
	Measured accordi	· = -	_	=0			
	1	Other	(only if not covered by	ECMA-74)			

NOTE B7 The following is to be excluded from the calculation of percentage: printed circuit boards, labels, cables, connectors and electronic components and postconsumer recycled plastic

NOTE B8 A Guidance document on Energy Efficiency is available; see <a href="http://www.ecma-international.org/publications/standards/Ecma-370.htm">http://www.ecma-international.org/publications/standards/Ecma-370.htm</a>

NOTE B9 A Guidance document on Acoustic Noise is available;  $see \ \underline{http://www.ecma-international.org/publications/standards/Ecma-370.htm}$ 

Model nui	mber *	82M1,82M2,8	B2MY		Logo	Long		
Issue date	e *	2021/04/30				Lenc		
Product	environn	nental attrib	utes - Market requirement	s (continued)		Require	ment	met
Item			-	•		Yes	No	n.a.
	Electron	nagnetic emis	ssions					
P10.4			ts the requirement for low frequ	ency electromagnetic	fields of the following volunta	ıry		
P12			oin AC adapter only) Duting products					
P12.1*			ergonomic requirements of ISC	9241-307 for visual	display technologies			$\square$
P12.2*		-	ice meets the requirements of I				$\overline{X}$	$\overline{\Box}$
P13		ng and docum	<u> </u>					
P13.1*			terial type(s): Corrugated Fibe	rboard wei	ght (kg): 0.326			
				ight (kg): 0.094	,			
P13.2*			terial type(s): LDPE+PE we packaging is free from PVC.	ight (kg): 0.016		<b>N</b>	_	_
_								屵
P13.3*	consume	er recovered file	orrugated fiberboard packaging ber content: <b>80</b> %		ned percentage of minimum	post-		
P13.4*			and product documentation (tic	k box):				
		ronic, 🔀 Pape						
P13.5			this item if paper documentatio mentation on paper media is ch					
		a product docu lease specify:	mentation on paper media is cr	norme-iree:			Ш	
		hlorine-free				$\square$		
	•	al chlorine-free						
	Process	ed chlorine-fre	e					
P14	Volunta	ry programs						
P14.1			requirements of the following v	oluntary program(s):				
	ENEDO	VOTABO	0.11	D / 0004/0				
		Y STAR® el: <i>EPEAT</i>	Criteria version: 8.0 Criteria version: IEEE 1680.1	Date: 2021/3	3 ,	obook		
		el: <b>PCGL</b>	Criteria version: Ver.13	Date: 2021/5				
	Eco-labe		Criteria version: NoteBook 8	.0 Date: 2021/5	0,			
P15			n (See NOTE B10)					
P9			of specific configuration may					
			no representations, guarantee					
			n this document. All information the time of completion, and su					on
	provided	here is approx	ximate and provided for informa					<b>5</b> 11
	informat							
P9			fied Notebooks & Tablet Compu gov/index.cfm?fuseaction=find					
	nup.//ww	ww.energystar.	gov/index.cim?ruseaction=find_	a_product.snowProd	uciGioupapgw_code=CO			

NOTE B10 Additional lines may be inserted to declare further items, by positioning the cursor at the far right of the row and hitting the <Enter> key.

## Legal references Europe Annex B2

Reference	Declaration item
Directive 2011/65/EU (RoHS Directive) * * Specific exemptions apply for certain products and applications.	P1.1
Regulation (EC) 1907/2006(REACH, Annex XVII	P1.2, P1.4, P1.6, P1.7
Regulation (EC) 2037/2000, 2038/2000, 2039/2000 (Marketing and use of Ozone layer depleting substances)	P1.3, P5.3
Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002	P1.5
Directive 2013/56/EC (Battery and accumulators Directive) *  * These provisions shall not apply where, for safety, performance, medical or data integrity reasons, continuity of power supply is necessary and requires a permanent connection between the appliance and the battery or accumulator.	P2.1, P2.2, P2,3, P8.1
Directive 2006/95/EC (Low Voltage Directive)	P3.1
Directive 2004/108/EC (EMC Directive)	P3.1
Directive 1999/5/EC (R&TTE Directive)	P3.1
Regulation (EC) 801/2013 amending Regulation (EC) No 1275/2008 with regard to ecodesign requirements for standby, off mode electric power consumption of electrical and electronic household and office equipment, and amending Regulation (EC) No 642/2009 with regard to ecodesign requirements for televisions	P3.1, P3.2
Regulation (EC) No 1272/2008 (CLP Regulation)	P7.19
Directive 2004/12/EC ( Packaging Directive)	P5.1
Decision 97/129/EC (Secondary packaging legislation)	P5.2
Directive 2012/19/EU (WEEE directive)	P6.1

# Lenovo ErP Lot3 Information Sheet - PC / Notebook -

As required by COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers (ErP Lot3).

#### **Products scope of this sheet:**

Desktop computer, integrated desktop computer, and notebook computer

This document is only valid in connection with the IT Eco Declaration of the specific Product.

Commercial name	Lenovo 14e Chromebook Gen 2, IdeaPad 3 Chrome 14APO6	Logo	
Model Number	82M1,82M2,82MY		Longyo
Issue Date	2021/04/30		Lenovo.
Additional information			-

d)	Year of manufacture:				2021
e)	Etec value (kWh) per ErP Lot 3 Catego disabled and if the system is tested with				cards (dGfx) are
)	Etec value (kWh) per ErP Lot 3 Categorienable	ry and capability adjust	ments applied when <b>a</b>	all discrete graphics	cards (dGfx) are
		Category A (according to ErP Lot 3)	Category B (according to ErP Lot 3)	Category C (according to ErP Lot 3)	Category D (according to ErP Lot 3)
	Memory over base [GB]	8			
ents	Additional internal storage	No (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)
adjustm ring tes	Discrete television tuner	No (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)
capability adjustments applied during testing	Discrete Audio Card	No (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)
capa	Discrete graphics Card(s) [number / #]	No #: (Yes / No)	#: (Yes / No)	#: (Yes / No)	#: (Yes / No)
	Category of discrete graphics Card(s)	NA			
saults	Etec Value (kWh) - dGfx disabled all discrete graphics cards (dGfx) are disabled/ UMA is active for switchable graphics/ product has no graphics cards (dGfx)	12.40			
Test results	Etec Value (kWh) - dGfx enabled all discrete graphics cards (dGfx) are enabled				
3)	Idle state power demand (Watts);				4.01
1)	Sleep mode power demand (Watts);				0.45
)	Sleep mode with WOL enabled power d	emand (Watts) (where	enabled);		
)	Off mode power demand (Watts);				0.28
:)	Off mode with WOL enabled power dem	and (Watts) (where en	abled);		
)	Internal power supply efficiency at 10 %	, 20 %, 50 % and 100 °	% of rated output pow	er (if applicable):	
	10% 20% 50%	100% Avera	age		
n)	External power supply efficiency (if appli	cable)*:			
	Average active efficiency: 45W: 87.98%	%, 88.63%, 88.83%; 6 <b>5</b>	W: 89.41%, 88.62%,	88.96%	
	*internal note: show values for all available external p	ower supplies			
p)	Minimum number of loading cycles that	the batteries can withs	tand (applies only to n	otebook computers):	300 cycles
o-1)	Measurement methodology used to dete	ermine information mer	ntioned in points (I) – in	nternal PSU efficiency	:
o-2)	Measurement methodology used to dete	ermine information mer	ntioned in points (m) –	external PSU efficience	cy:

(p-3)	Measurement methodology used to determine information mentioned in points (o) – loading cycles batteries: EN 61960 measurement methodology					
(p-4)		dology used to determine information mentioned in r Point P9.1 in the Product IT Eco Declaration: IEC 62623 / IEC EN50564:2011 measurement re	•			
(q)	Sequence of steps for	or achieving a stable condition with respect to power	demand::			
		IEC 62623 / IEC EN50564:2011 measurement n	nethodology			
(r)	Description of how sl	eep and/or off mode was selected or programmed:				
	refer to power management, sleep mode: ACPI system level G1/S3 (suspend to RAM) state; off mode:  ACPI system level G2/S5 ('soft off') state					
(s)	Sequence of events off mode:	required to reach the mode where the equipment au	tomatically changes to sleep and/or			
		r to power management, 8.5mins automatically r	eaches sleep mode			
(t)		te condition before the computer automatically re		8.5		
(u)						
(11)	mode that has a lower power demand requirement than sleep mode (in minutes):					
(v) Length of time before the display sleep mode is set to activate after user inactivity (in minutes): (w) Information on the energy-saving potential of power management functionality:						
	User information	n described in User Guide and Power Manager u programs	nder ThinkVantage menu in all			
(x)	User information on I	now to enable the power management functionality:				
	User informatio	n described in User Guide and Power Manager u programs	nder ThinkVantage menu in all			
(z)		measurements: — test voltage in V and frequency in system, — information and documentation on the insting:  230V, 50Hz, Total Harmonic Distortion	strumentation, set-up and circuits			
Addition	al Notebook Batter	y Information:				
Addition	al Notebook Batter	Battery[ies] <b>not</b> user replaceable	Battery[ies] user replaceable	n/a		
		The battery[ies] in this product cannot be easily replaced by users themselves. 1)	zanory[ioo] acor ropiacoazio	1,74		
Internal/b	uilt-in Battery					
External/	detachable Battery					
Bios Backup Battery						
Other:						
Additiona	l information			,		
)						

The battery[ies] in this product cannot be easily replaced by users themselves.

Акумулаторната[ите] батерия[и] в този продукт не може да се замени[ят] лесно от самите потребители.

Las baterías de este producto no pueden ser sustituidas fácilmente por los propios usuarios. Výměnu baterie/baterií v tomto výrobku by neměli provádět sami uživatelé.

Brugeren kan ikke uden videre udskifte batteriet/batterierne i dette produkt.

Der Akku/die Akkus dieses Produkts kann/können nicht ohne weiteres vom Benutzer selbst ausgetauscht werden. Kasutajad ei saa selle toote akut/akusid ise hõlpsasti asendada.

Η μπαταρία[-ες] στο προϊόν αυτό δεν μπορούν να αντικατασταθούν εύκολα από τους ίδιους τους χρήστες

La/les batterie(s présente(s) dans ce produit ne peuvent être facilement remplacée(s) par les utilisateurs eux-mêmes. Korisnik ne može lako zamijeniti Bateriju sam u ovom proizvodu.

La batteria/le batterie in questo prodotto non può/possono essere facilmente sostituita/e dall'utente. Lietotăji paši nevar nomainīt šā ražojuma akumulatoru(-us). Šio gaminio baterijos [baterijų] pats vartotojas negali lengvai pakeisti.

A termék akkumulátorát/akkumulátorait a felhasználó nem tudja egyedül egyszerűen kicserélni.

Il-batterija/batteriji f'dan il-prodott ma tistax/jistgħux tiġi/jiġu sostitwita/i mill-utenti stess. Batteriet [ene] i dette produktet kan ikke lett erstattes av brukerne selv.

De batterij(en) in dit product is (zijn) door de gebruiker niet gemakkelijk vervangbaar.

Użytkownik nie może sam w łatwy sposób wymienić baterii w tym produkcie. A ou as baterias deste produto não podem ser facilmente substituídas pelos próprios utilizadores.

Bateria (bateriile) din acest produs nu poate (pot) fi uşor înlocuită (înlocuite) de utilizatorii înşişi. Batériu(-ie) v tomto výrobku nemôže vymieňať používateľ. Baterij/baterije v tem izdelku uporabniki sami ne morejo zlahka zamenjati.

Tämän tuottéen akku [akut] ei[vät] ole helposti käyttäjän vaihdettavissa.

Det är inte enkelt för kunden att själv byta ut batteriet/batterierna. Bu üründeki batarya(lar) kullanıcılar tarafından kolaylıkla değiştirilemez.