



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 * e-mail address	Lenovo Global Environmental Affairs Alvin L Carter alcarter@lenovo.com		Lenovo.
Internet site *	http://www.lenovo.com/social_responsibility/us/en/environment	.html	
Additional information	The latest version of this document can be found at:		
	http://www.lenovo.com/ecodeclaration		

	based on product specification or test results based obtained from sample testing), that the product
conforms to the statemen	nts given in this declaration.
Type of product *	Notebook
Commercial name *	ThinkPad T14s
Model number *	2070, 2071
Issue date *	2020/02/25
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 nu	mber *	20T0, 20T1	Logo	Long		
Issue dat	:e *	2020/2/25		Lend	JVC) _{TM}
Product	environ	mental attributes - Legal requirements		Require	ment	met
Item				Yes	No	n.a.
P1	Hazardo	ous substances and preparations				
P1.1*	Products	s do comply with current European RoHS Directive. (See legal reference and NOTE	B1)	\boxtimes		
P1.2*		s do not contain Asbestos (see legal reference). nt: Legal reference has no maximum concentration value.				
P1.3*	hydrobro trichloro	s do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), omofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrach ethane, methyl bromide (see legal reference). Comment: Legal reference has no metation values.				
P1.4*	terpheny	s do not contain more than; $0,005\%$ polychlorinated biphenyl (PCB), $0,005\%$ polych ℓ l (PCT) in preparations (see legal reference).				
P1.5*		s do not contain more than 0,1% short chain chloroparaffins (SCCP) with 10-13 cart ntaining at least 48% per mass of chlorine in the SCCP (see legal reference).	on atoms in th	e 🔀		
P1.6*	(see lega	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/cm ² /weel	〈		
P1.7*	REACH	Article 33 information about substances in articles is available at (add URL or mail own.lenovo.com/social_responsibility/us/en/environment.html	contact):	\boxtimes		
P2	Batterie	s				
P2.1*		oduct 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 reference	s or accumulators do not contain more than 0,0005% of mercury or 0,002% of cadme)	ium. (See lega	I 🔀		
P2.3*	Batteries	s and accumulators are readily removable. (See legal reference)		\boxtimes		
P3	Conforn	nity verification & Eco design (ErP)				
P3.1*	The prod	duct is CE-marked to show conformance with applicable legal requirements (see leg- claration of Conformity can be requested at: https://www.lenovo.com/us/en/complian		\boxtimes		
P3.2*		duct complies with the Eco design requirements for energy-related products, al reference).		\boxtimes		
		d information is; given in item P15 or added to this document, available at: https://www.lenovo.com/us/en/compliance/e	eco-declaration			
P5	Product	packaging				
P5.1*	Packagii	ng and packaging components do not contain more than 0,01% lead, mercury ent chromium by weight of these together.	/, cadmium an	ıd 🔀		
P5.2*	The pac	kaging materials are marked with abbreviations and numbers indicating the nature one legal reference).	of the material(s) 🔀		
P5.3*	The prod (see lega	duct packaging material is free from ozone depleting substances as specified in the Nal reference). In the standard reference has no maximum concentration values.	Iontreal Protoc	ol 🔀		
P6		nt information				
P6.1*		on for recyclers/treatment facilities is available (see legal reference).			$\overline{\Box}$	

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 number *	20T0, 20T1	Logo	Lonovo
Issue date *	2018/2/25		LEI IOVO"

Product	environmental attributes - Market requirements (See General NOTE GN below)			
		Require	ment	met
Item	*=mandatory to fill in. Additional information regarding each item may be found under P14.	Yes	No	n.a.
P7	Design, Disassembly, recycling			
P7.1*	Parts that have to be treated separately are easily separable	\boxtimes		
P7.2*	Plastic materials in covers/housing have no surface coating.		\boxtimes	
P7.3*	Plastic parts > 100 g consist of one material or of easily separable materials.			
P7.4*	Plastic parts > 25 g have material codes according to ISO 11469 referring ISO 1043-4.	\boxtimes		
P7.5	Plastic parts are free from metal inlays or have inlays that can be removed with commonly available tools.	\boxtimes		
P7.6*	Labels are easily separable. (This requirement does not apply to safety/regulatory labels).	\boxtimes		
	Product lifetime			
P7.7*	Upgrading can be done e.g. with processor, memory, cards or drives			
P7.8*	Upgrading can be done using commonly available tools	\boxtimes		
P7.9	Spare parts are available after end of production for: 5 years			
P7.10	Service is available after end of production for: 5 years			
	Material and substance requirements			
P7.11*	Product cover/housing material type (e.g. plastics, metal, aluminum): Material type: PC+45%GF Material type: EP+70%CF Material type: PC+ABS Material type: MgAI	i		
P7.12	Insulation materials of external electrical cables are PVC free.		\boxtimes	
P7.13	Insulation materials of internal electrical cables are PVC free.	\square		
P7.14	External plastic casing/cover parts > 25 g contain no more than 0,1% weight (1000 ppm) bromine and 0,1% weight (1000 ppm) chlorine attributable to brominated flame retardants, chlorinated flame retardants, an polyvinyl chloride or 0,3% weight (3000 ppm) bromine and 0,3% weight (3000 ppm) chlorine in parts containing more than 25% post-consumer recycled content.	d		
P7.15	Printed circuit boards, PCBs (without components) are low halogen: all PCBs > 25 g are low haloge as defined in IEC 61249-2-21. (See 1NOTE B2)	n 🛚		
P7.16	Flame retarded plastic parts > 25 g in covers / housings are marked according ISO 1043-4: Marking: FR(40)			
P7.17	Alt. 1: Chemical specifications of flame retardants in printed circuit boards > 25 g (without components): TBBPA (additive), TBBPA (reactive) (See NOTE B3), Other: Phosphorus Modified Epoxy Resin	, 🛛		
	CAS #: confidential Alt. 2: Chemical specifications of flame retardants in printed circuit boards (without components) > 25 g			
D7.40	according ISO 1043-4: Alt. 1: Flame retarded plastic parts > 25 g contain the following flame retardant substances/preparations in			
P7.18	concentrations above 0,1%: 1. Chemical name: <i>Phosphorus compounds</i> , CAS #: <i>confidential</i> (See NOTE B4) 2. Chemical name: , CAS #: "			
	•			
D7 10	Alt. 2: Chemical specifications of flame retardants in plastic parts > 25 g according ISO 1043-4:		 	
P7.19	In plastic parts > 25 g, flame retardant substances/preparations above 0,1% are used which have been assigned the following Risk phrases; <i>confidential</i> and Hazard statements: <i>confidential</i>		Ш	
P7.20*	The source(s) for these classifications is/are found at (add URL(s)): , (See note B5)			
1 ⁻ 1.2U	Postconsumer recycled plastic material content is used in the product (See Note B6): If YES; at least one of the two alternatives below shall be answered; a) Of total plastic parts' weight > 25 g, the postconsumer recycled plastic material content (calculated as a percentage of total plastic by weight) is 6.13%. or b) The weight of recycled material is 20.2 g.			

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 http://www.ecma-international.org/publications/standards/Ecma-370.htm

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 *	20T0, 20T1	Logo	Lonovo
Issue date *	2020/2/25		LEI IOVO,

Product environmental attributes - Market requirements (continued)	Requi	remer	nt met
Item	Yes	No	n.a.

	Matarial and aub	stance requirements	(acation ad)		
P7.21*			I in the product (See N	OTF B7):	
	•			,	
	,		es below shall be answe the biobased plastic m	,	tod as a percentage of
	 a) Of total plast total plastic b 		the biobased plastic in	ateriai content (calcula	ted as a percentage of
	or	y worging to			
		f the biobased plastic r			
P7.22*			less than 0,1 mg/lamp.		
-		specify: Number of lar	nps: and maxim	um mercury content pe	er lamp: mg
P8.1*	Batteries	composition: <i>Li-ion</i>			
P9		tion (See NOTE B8)	s or energy consumption	ana ara rapartad:	
Energy mo		Power level at	Power level at	Power level at	Reference/Standard for energy
Lilorgy ino	do	100 V AC	115 V AC	230 V AC	modes and test method *
Peak (On-	max)	65 W	65 W	65 W	Full load
0-1	. 4				
Categor	<u>y 1</u>				
Short Idle	State - WOL	5.11 W	4.94 W	4.90 W	Use for ENERGY STAR V8
Enabled					registration (Pidle)
I ong Idle	State - WOL	1.96 W	1.91 W	2.10 W	Use for ENERGY STAR V8
Enabled	otate WOL	1.00 11	1.07 **	2.70 11	registration (P _{idle})
					To the term of the
Sleep (S3)	- WOL Enabled	2.06 W	1.91 W	2.00 W	Use for ENERGY STAR V8
					registration (Psleep)
Off (S5) - I	NOL Enabled	0.31 W	0.31 W	0.33 W	Use for ENERGY STAR V8
(5.5)					registration (Poff)
EPS No-loa		0.094 W	0.096 W	0.114 W	
	au supply / charger plugged in the	0.094 VV	0.090 VV	0.114 vv	
wall outlet but dis	connected from the product.)	0.0014	0.0714	0.04344	
PTEC *	ergy Consumption	2.38 W	2.27 W	2.31 W	
ETEC *	ergy Consumption	20.85 kWh/year	19.86 kWh/year	20.26 kWh/year	$E_{TEC} = (8760/1000) \times (P_{off} \times 0.25)$
	ergy Consumption	20100 111111111111111111111111111111111	10100 111111111111111111111111111111111	20120 111111111111111111111111111111111	+ P _{sleep} x 0.35 + P _{long Idle} x 0.10+
					Pshort_Idle x 0.30)
					ed; Pidle: Idle State - WOL Enabled
		•	Efficiency Marking Pro	otocol) * : VI	
Display res	solution * : 2.07(198	0*1080) megapixels			
Default tim	e to enter energy sa	ave mode: 10 minutes			
P9.2*	Information about	the energy save function	on is provided with the	product.	
P9.3	Energy efficiency	class (monitors only):			
P10	Emissions				
	Noise emission -	- Declared according to	ISO 9296 (See NOTE		
P10.1		Mode description			t A-weighted sound power level, L _{WA,c} (B)
	Idle '	HDD idle		* 2.5	
	Operation	Operating (CPU)		* 3.5	
	Other mede	Operating (HDD)	d proceure level (dP) r	* 2.6	d1-4 (-III-)
			d pressure level (dB) $L_{p{\sf Am}}$		
	Other mode	Declared A-weighted soun	d pressure level (dB) $L_{p{\sf Am}}$	16 (operator positio	n desktop – operating CPU)
				26 (operator position	desktop – operating HDD)
	Magazired agazire	ng to: 🔀 ISO 7779 🔀	TECMA 74	1	
	ivieasured accordi			ECMA 74)	
1	1	Other	(only if not covered by	EUNA-/4)	

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 http://www.ecma-international.org/publications/standards/Ecma-370.htm

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

woder nu	mber	2010, 2011			Logo	Long	110	
Issue date	e *	2020/2/25				Lenc		THE
Product	environr	nental attributes	- Market requirements (cor	ntinued)		Require	ment	met
Item			,	,		Yes	No	n.a.
	Electron	nagnetic emission	s					
P10.4	Compute program	er display meets the (s): MPR-II(3 pin A	e requirement for low frequency e C adapter only)	electromagnetic fields	of the following voluntar	y		
P12		mics for computin						
P12.1*	The disp	lay meets the ergor	nomic requirements of ISO 9241-	307 for visual displa	y technologies.			
P12.2*			eets the requirements of ISO 999	95 and ISO 9241-410	0.	\boxtimes		
P13		ng and document						
P13.1*	Product Product Product \ Produc	packaging material t packaging materia	type(s): acc box weight (kg type(s): system LDPE bag type(s): system LDPE bag il type(s): EPE cushion					
P13.2*			kaging is free from PVC.			\boxtimes		
P13.3*	consume	er recovered fiber co			ercentage of minimum p	oost-		
P13.4*			product documentation (tick box) Other	:				
P13.5	Ùser and		tem if paper documentation used ation on paper media is chlorine-					
	Element	hlorine-free al chlorine-free ed chlorine-free						
P14	Volunta	ry programs						
P14.1	The prod	luct meets the requ	irements of the following voluntar	ry program(s):				
		Y STAR® el: <i>EPEAT</i>	Criteria version: 8.0 Criteria version: IEEE 1680.1-2018	Date: 2020/2/25 Date: 2020/03/31	Product category: 1 Product category: Note.	book		
	Eco-labe Eco-labe		Criteria version: Ver.13 Criteria version: Gen8.0	Date: 2020/03/31 Date: 2020/03/31	Product category: Note Product category: Note			
P15	Addition	nal information (Se	ee NOTE B10)					
P9	Energy	consumption of s	pecific configuration may vary;	description of the	tested product configu	ration:		
	NOTE: S informati knowled provided informati	Supplier makes no roon contained in this ge available at the the here is approximation.	epresentations, guarantees, assus document. All information providing ime of completion, and supplier se and provided for informational	urances or warranties ded by supplier in this shall have no obligati purposes only. See a	s whether express or imp s document is provided b ion to update such inform a Lenovo Account Repres	lied, regardir ased on supp ation. The in	plier's formati	ion
P9			lotebooks & Tablet Computers for ndex.cfm?fuseaction=find_a_proc					

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	ThinkPad T14s	Logo	
Model Number	20T0, 20T1		Lonovo
Issue Date	2020/2/25		Lenovo.
Additional information			

(d)	Year of manufacture:				2019
e)	Etec value (kWh) per ErP Lot 3 Catego disabled and if the system is tested with				cards (dGfx) are
f)	Etec value (kWh) per ErP Lot 3 Categorenable	ry and capability adjust	ments applied when a	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]	28	, , ,		
ents	Additional internal storage	No (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)
capability adjustments applied during testing	Discrete television tuner	No (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)
ability a lied du	Discrete Audio Card	No (Yes / No)	(Yes / No)	(Yes / No)	(Yes / No)
caps appl	Discrete graphics Card(s) [number / #]	No #: (Yes / No)	#: (Yes / No)	#: (Yes / No)	#: (Yes / No)
	Category of discrete graphics Card(s)	NA			
esults	Etec Value (kWh) - dGfx disabled all discrete graphics cards (dGfx) are disabled/ UMA is active for switchable graphics/ product has no graphics cards (dGfx)	5.38			
Test results	Etec Value (kWh) - dGfx enabled all discrete graphics cards (dGfx) are enabled				
(g)	Idle state power demand (Watts);	<u> </u>	<u> </u>	<u> </u>	0.98
(h)	Sleep mode power demand (Watts);				0.98
(i)	Sleep mode with WOL enabled power de	emand (Watts) (where	enabled);		0.98
j)	Off mode power demand (Watts);				0.37
(k)	Off mode with WOL enabled power dem	and (Watts) (where en	abled);		0.37
(I)	Internal power supply efficiency at 10 %	, 20 %, 50 % and 100 °	% of rated output pow	er (if applicable):	
	10% 20% 50%	100% Avera	age		
(m)	External power supply efficiency (if appli	icable)*:			
	Average active efficiency: 65W:89,41%	,88,62%,88,96%			
	*internal note: show values for all available external p				
(o)	Minimum number of loading cycles that	the batteries can withs	tand (applies only to n	otebook computers):	500
(p-1)	Measurement methodology used to dete	ermine information mer NA	ntioned in points (I) – in	nternal PSU efficiency	
(p-2)	Measurement methodology used to dete	ermine information mer 63:2011 measuremen	ntioned in points (m) –	external PSU efficience	cy:

(p-3)	Measurement methodology used to determine information mentioned in points (o) – loading cycles batteries: EN 62623:2013 measurement methodology			
(p-4)	Measurement methodology used to determine information mentioned in maximum, idle, sleep, off mode power as defined in Point P9.1 in the Product IT Eco Declaration: IEC 62623 / IEC EN50564:2011 measurement methodology			
(q)	Sequence of steps for achieving a stable condition with respect to power demand: IEC 62623 / IEC EN50564:2011 measurement methodology			
(r)	Description of how sleep 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 required to reach the mode where the equipment automatically changes to sleep and/or off mode: *refer to power management, 30mins automatically reaches sleep mode*			
(t)	Duration of idle state condition before the computer automatically reaches sleep mode, or another condition which does not exceed the applicable power demand requirements for sleep mode (in minutes):			10
(u)	Length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power demand requirement than sleep mode (in minutes):			NA
(v)	Length of time before the display sleep mode is set to activate after user inactivity (in minutes):			10
(w)	Information on the energy-saving potential of power management functionality: refer to user manual			
(x)	User information on how to enable the power management functionality: refer to user manual			
(z)	Test parameters for measurements: — test voltage in V and frequency in Hz, — total harmonic distortion of the electricity supply system, — information and documentation on the instrumentation, set-up and circuits used for electrical testing: 230V/50HZ, Total Harmonic Distortion<2%			
Additio	nal Notebook Batter	y Information:		
		Battery[ies] not user replaceable	Battery[ies] user replaceable	n/a
		The battery[ies] in this product cannot be easily replaced by users themselves. 1)		
Internal/built-in Battery				
External/detachable Battery				
Bios Backup Battery				
Other:				
Addition	nal 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 užívatelé. 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.

Lietotāji 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 tuotteen 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.