

Product environmental attributes – THE ECO DECLARATION

The declaration may be published only when all rows and/or fields marked with an * are filled-in (n.a. for not applicable). Additional information regarding each item may be found under P14.

| Brand * | Lenovo | Logo |
|------------------------|---|--------|
| Company name * | Lenovo | |
| Contact information * | Image: Second State Sta | |
| Internet site * | http://www.lenovo.com/social_responsibility/us/en/environmen | t.html |
| Additional information | | |

| | 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 * | lotebook PC | | | | | |
| Commercial name * | Lenovo B4450s | | | | | |
| Model number * | 20317;80CD | | | | | |
| Issue date * | 2013-09-06 | | | | | |
| 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.

| Quality | Quality Control F | | | | |
|---------|--|-------------|----|--|--|
| Item | | Yes | No | | |
| QC1 * | The company enforces an internal quality control scheme to ensure the correctness of this eco declaration | \boxtimes | | | |
| QC2 * | The company is a member of an eco declaration system that enforces regular independent quality contro such as organized by IT-Företagen (see www.itecodeclaration.org). | bl 🔀 | | | |

| Model number * | Lenovo B4450s | | |
|----------------|---------------|------|--------|
| Issue date * | 2013-09-06 | Logo | lenovo |

| | t environmental attributes - Legal requirements | Require | | |
|----------------|--|-----------|----|-------------|
| Item | | Yes | No | n.a. |
| P1 | Hazardous substances and preparations | | | |
| P1.1* | Products do not contain more than; 0.1% lead, 0.01% cadmium, 0.1% mercury, 0.1% hexavalent | \square | | |
| | chromium, 0.1% polybrominated biphenyls (PBB) or 0.1% polybrominated diphenyl ethers (PBDE). (See | | | |
| | legal reference and Note B1) | | | |
| P1.2* | Products do not contain Asbestos (see legal reference). | \square | | |
| | Comment: Legal reference has no maximum concentration value. | | | |
| P1.3* | Products do not contain Ozone Depleting Substances: Chlorofluorocarbons (CFC), | \square | | |
| | hydrobromofluorocarbons (HBFC), hydrochlorofluorcarbons (HCFC), Halons, carbontetrachloride, 1,1,1- | | | |
| | trichloroethane, methyl bromide (see legal reference). Comment: Legal reference has no maximum | | | |
| | concentration values. | | | |
| P1.4* | Products do not contain more than; 0.005% polychlorinated biphenyl (PCB), 0.005% polychlorinated | \bowtie | | |
| | terphenyl (PCT) in preparations (see legal reference). | | | |
| P1.5* | Products do not contain more than 0.1% short chain chloroparaffins (SCCP) with 10-13 carbon atoms in | \bowtie | | |
| | the chain containing at least 48% per mass of chlorine in the SCCP (see legal reference). | | | |
| P1.6* | Textile and leather parts with direct skin contact do not contain Tri-(2,3,-dibromopropyl)-phosphate (TRIS), | | | \square |
| | Tris-(aziridinyl)-phosphineoxide (TEPA), polybrominated biphenyl (PBB) (see legal reference). | | | |
| | Comment: Legal reference has no maximum concentration values. | | | |
| P1.7* | Textile and leather parts with direct skin contact do not contain more than 0.003% Azo colorants that split | | | \square |
| | aromatic amines. (See legal reference and Note B1) | | | |
| P1.8* | Wooden parts do not contain arsenic and chromium as a wood preservation treatment as well as | | | \boxtimes |
| | pentachlorophenol and derivatives (see legal reference). | | | |
| | Comment: Legal reference has no maximum concentration values. | | | |
| P1.9* | Parts with direct and prolonged skin contact do not release nickel in concentrations above 0.5 | \bowtie | | |
| | microgram/cm ² /week (see legal reference). | | | |
| | Comment: Max limit in legal reference when tested according to EN1811:1998. | | | |
| P1.10* | REACH Article 33 information about substances in articles is available at (add URL or mail contact): | \bowtie | | |
| | http://www.lenovo.com/social_responsibility/us/en/ThinkGreen_products.html#environment | | | |
| P2 | Batteries | | | |
| P2.1* | If the product contains a battery or an accumulator, it is labeled with the disposal symbol and if it contains | \square | | |
| | more than 0.0005% of mercury (for button cells only) by weight, or more than 0.004% of lead, it shall be | | | |
| | marked with the chemical symbol for the metal concerned, Hg or Pb. Information on proper disposal is | | | |
| | provided in user manual. (See legal reference) | | | |
| P2.2* | Button cells used in the product do not contain more than 2% by weight of mercury. Other batteries or | | | |
| | accumulators do not contain more than 0.0005% of mercury or 0.002% of cadmium. (See legal reference) | | | |
| P2.3* | Batteries and accumulators are easily removable by either users or service providers (as dependent on the | | | |
| | design of the product). Exception: Batteries that are permanently installed for safety, performance, medica | | | |
| | or data integrity reasons do not have to be "easily removable". (See legal reference) | | | |
| P3 | Safety, EMC connection to the telephone network and labeling | | | |
| P3.1* | The product complies with legally required safety standards as specified (see legal reference). | | | |
| P3.2* | The product complies with legally required standards for electromagnetic compatibility (see legal | | H | H |
| 1 0.2 | reference). | | | |
| P3.3* | If product is intended for connection to a public telecom network or contains a radio transmitter, it complies | | | |
| . 0.0 | with legally required standards for radio and telecommunication devices (see legal reference). | | | |
| P3.4* | The product is labeled to show conformance with applicable legal requirements (see legal reference). | \square | | |
| | | | | |
| P4 | Consumable materials | | | |
| P4.1* | If a photo conductor (drum, belt etc.) is used in the product, it does not contain cadmium max 0.01% (see | | | \boxtimes |
| D 4 6 | legal reference and Note B1). | | | <u> </u> |
| P4.2* | If ink/toner is used in the product, it does not contain cadmium max 0.1% by weight (see legal reference). | | | |
| P4.3* | If the ink/toner formulation/preparation is classified as hazardous according to applicable regulations, the | | | \square |
| | product/packaging is adequately labeled and a Safety Data Sheet (SDS) in accordance with these | <u> </u> | | لانے |
| | requirements is available (see legal reference). | | | |
| P5 | Product packaging | | | |
| P5.1* | Packaging and packaging components do not contain more than 0.01% lead, mercury, cadmium and | d 🔀 | | |
| | hexavalent chromium by weight of these together. | | | |
| | | | | |
| P5.2* | Plastic packaging material is marked according to ISO 11469 referring ISO 1043 (see legal reference). | 1 X I | | |
| P5.2* | Plastic packaging material is marked according to ISO 11469 referring ISO 1043 (see legal reference). | | ╞ | ⊢⊢ |
| P5.2* P5.3* | Plastic packaging material is marked according to ISO 11469 reterring ISO 1043 (see legal reterence). The product packaging material is free from ozone depleting substances as specified in the Montrea Protocol (see legal reference). | 1 🖂 | | |

Note B1: Restriction applies to the homogeneous material, unless other specified and expressed in weight %.

| Model n | umber * | Lenovo B4450s | | | | |
|----------|---|--|------------|-------------|--------------|------|
| Issue da | ate * | 2013-09-06 Logo | le | no | vo | |
| Produc | t environ | mental attributes - Market requirements - Environmental conscious desigr | Reg | uiror | nent | mot |
| Item | | atory to fill in. Additional information regarding each item may be found under P14. | | res | No | n.a. |
| P6 | | ent information | | | 110 | ma. |
| P6.1* | Informat | ion for recyclers/treatment facilities is available (see legal reference). | | \boxtimes | | |
| P7 | Design | | | | | |
| | | mbly, recycling | | | | |
| P7.1* | | at have to be treated separately are easily separable | | \boxtimes | | |
| P7.2* | Plastic n | naterials in covers/housing have no surface coating. | | \times | | |
| P7.3* | Plastic p | arts >100g consist of one material or of easily separable materials. | | \boxtimes | | |
| P7.4* | Plastic p | arts >25g have material codes according to ISO 11469 referring ISO 1043. | | \boxtimes | | |
| P7.5 | Plastic p | arts are free from metal inlays or have inlays that can be removed with commonly availab | e tools. | \boxtimes | | |
| P7.6* | Labels a | re easily separable. (This requirement does not apply to safety/regulatory labels). | | | Π | Ē |
| | | lifetime | | | | |
| P7.7* | | ng can be done e.g. with processor, memory, cards or drives | | \boxtimes | | |
| P7.8* | Upgradii | ng can be done using commonly available tools | | \boxtimes | | |
| P7.9. | Spare pa | arts are available after end of production for: 5 years | | | | F |
| P7.10 | | is available after end of production for: 5 years | | | | Ħ |
| | | and substance requirements | | | | |
| P7.11* | Product | cover/housing material type: | | | | |
| | Material | type: PC+ABS-FR(40) Material type: Material type: | | | | |
| P7.12 | | al cable insulation materials of power cables are PVC free. | | | \mathbf{X} | |
| P7.13 | | al cable insulation materials of signal cables are PVC free | | | \boxtimes | |
| P7.14 | All cover | /housing plastic parts >25g are free from chlorine and bromine. | | \boxtimes | | |
| P7.15 | All printe Note B2 | ed circuit boards (without components) >25g are halogen free. as defined in IEC61249-2) | -21. (See | | \square | |
| P7.16 | Marking | etarded plastic parts >25g in covers / housings are marked according ISO 1043-4: : FR(40) | | \boxtimes | | |
| P7.17 | TBBPA Alt. 2 | al specifications of flame retardants in printed circuit boards >25g (without components): (additive) , TBBPA (reactive) , Other; chemical name: , CAS #: | cording | | | |
| D7 10 | ISO 104 | 3-4: Brominated Epoxy Resin See P14 | cording | | | |
| P7.18 | concenti | retarded plastic parts >25g contain the following flame retardant substances/prepa rations above 0.1%: | rations in | | | |
| | Provide complete 1. Chem 2. Chem | nt: No legal limits exist, this is a market requirement. a list of all used flame retardants including MSDS for each flame retardant. The list mu e chemical name, CAS number and supplier. ical name: , CAS #: , Supplier: ical name: , CAS #: , Supplier: ical name: , CAS #: , Supplier: | st contain | | | |
| | Alt. 2 | al specifications of flame retardants in plastic parts >25g according ISO 1043-4: | | | | |
| P7.19 | | parts >25g are free from flame retardant substances/ preparations above 0.1% classified a 6, R48, R50, R51, R53, R60, R61 and any combination of these (See Note B3) | s R45, | \boxtimes | | |
| P7.20 | | plastic parts' weight >25g, recycled material content is 4.7% . | | | | |
| P7.21 | | plastic parts' weight >25g, biobased material content is 0%. | | | | |
| P7.22 | | urces are free from mercury | | \boxtimes | | |
| P8 | Batterie | | | | | _ |
| P8.1* | , | chemical composition: Lithium Ion/Lithium Manganese Dioxide | | | | ᆜ |
| P8.2 | Batteries | s meet the requirements of the following voluntary program/s: US RBRC | | | | |

Note B2: IEC61249-2--21 has maximum limits for chlorine and bromine but does not address fluorine, iodine and astatine which are included in the group of halogens.

Note B3: 'Starting from January 2009, Risk phrases can be replaced by Hazard phrases according to the Globally Harmonized System (GHS), mandatory by December 2010.

| Model nur | umber* Lenovo B4450s | | | | | | | | | |
|----------------------------|---|----------------------------|---------------------------|-------------------------------------|---------------------------|---|-----------------|--------------------------------|----------------------|------|
| Issue date | * | 2013-09- | 06 Logo lenovo. | | | | | | | |
| Desident | | | | | P P | | | D | | |
| Item | environm | nental at | tributes - Market | requirements (co | ontinued) | | | Require Yes | No No | n.a. |
| P9 | Energy | consump | tion | | | | | 163 | NO | n.a. |
| 9.1 | For the p | roduct the | e following power lev | | mptions are reporte | ed: See P14 | | | | |
| | - | uct is ship | pped w/ WOL Enable | ed. | | | | \square | | |
| Energy mode * | | Power level at 100 V AC | Power level at 115 VAC | Power level at 230 V AC | Reference and test me | | for energy m | iodes | | |
| Peak (On- | max) | | 45 W | 45 W | 45 W | Full load | | | | |
| Categor | <u>y A</u> | | • | | | | | | | |
| Idle State | - WOL En | abled | 4.932W | 5.076W | 4.812 W | Use for En | ergy Star V | 5 registration(| P _{idle}) | |
| Sleep (S3) |) - WOL EI | nabled | 0.576 W | 0.576 W | 0.588W | Use for En | ergy Star V | 5 registration(| P _{sleep}) | |
| Sleep (S3) |) - WOL D | isabled | 0.820 W | 0.810 W | 0.830 W | Reference | | | | |
| Off (S5) - | WOL Enal | bled | 0.408 W | 0.408 W | 0.420 W | Use for En | ergy Star V | 5 registration(| P _{off}) | |
| Off (S5) - | WOL Disa | bled | 0.41W | 0.41 W | 0.44 W | Use for Eu | Р | | | |
| EPS No-loa | | | 0.089 W | 0.093 W | 0.144 W | | | | | |
| (External p charger plu | | | | | | | | | | |
| outlet but o | | | | | | | | | | |
| the product | t.) | | | | | | | | | |
| TEC Typical En | oray Conc | umption | kWh/week | kWh/week | kWh/week | | | | | |
| i ypicai Lin | ergy cons | umption | | | | | | | | |
| ETEC * Annual Ene | ETEC * Annual Energy Consumption | | 15.61 kWh/year | 15.99 kWh/year | 15.37 kWh/year | $E_{TEC} = (870)$ 0.1 + P_{idle} x | | $P_{off} \times 0.6 + P_s$ | leep X | |
| | | | Poff: Off Mode(S5) - 1 | NOL Enabled; P _{sleep} : S | Sleep Mode(S3) - WOL | Enabled; P _{idl} | e: Idle State - | WOL Enabled | | |
| Display res | solution : | 1366*76 | ⁸ Megapixels | | | | | | | |
| Print Spee | d : | | Images per minu | te | | | | | | |
| Default tim | e to enter | energy sa | ave mode: 25 minute | s | | | | | | |
| P9.2* | Informati | on about | the energy save fund | tion is provided with | the product. | | | \boxtimes | | |
| P9.3* | The prod | uct meets | the energy requiren | nents of the followin | g voluntary program | /s: | | | _ | |
| | | | version: Version 5.0 | | | | | | | |
| P10 | Emissio | | ergy Star for Exter | nai Power Supplies | Eligibility Criteria | version 2 | | | | |
| FIV | | | Declared according | to ISO 9296 | | | | | | |
| P10.1 | Mode | | Node description | | Declared | | Declared A-w | 0 | | |
| | | | | | A-weighted sound power | sound | pressure leve | el $L_{p {\rm Am}}$ (dB) | | |
| | | | | | | Operator pos | sition 🔀 | Bystander pos | itions | 1 |
| | | | | | WAUX / | Des | ktop 🔀 👝 | a mhu if mua du at i | | |
| | | | | | | or Desk | side 🗌 (| only if product operator atter | | |
| | Idle | | HDD: Idle | | * 3.0 | | 23.7 | | - / | |
| | Operation | | HDD: Operating | | * 3.0 | | 26.1 | | | |
| | Other mo | | | _ | | | | | | |
| | Measure | d accordir | | ECMA-74 | | | | | 、 | |
| P10.2 | The pred | uot mosta | Other | | ed by ECMA-74 with | | urement dista | ance m |) | |
| 1 10.2 | The product meets the acoustic noise requirements of the following voluntary program/s: | | | | | | | | | |

| Issue dat | te * | 2013-09- | vo B4450s | | | Logo | lenovo | |
|--|------------|------------------|--|---------------------------------------|---------------------------------|--|--|-------------|
| | | | | | | | ienovo | |
| Product | environn | nental at | tributes - Market | requirements (co | ontinued) | | Requiremen | t met |
| ltem | | | | | | | Yes No | n.a. |
| P9 | | consumpt | | | | | | |
| 9.1 | | | e following power lev oped w/ WOL Enable | | mptions are reporte | ed: <i>See P14</i> | | |
| Energy mode * | | | Power level at 100 V AC | Power level at 115 VAC | Power level at 230 V AC | Reference / Standar and test method * | d for energy modes | ; 🗌 |
| Peak (On-max) | | | 65W | 65 W | 65 W | Full load | | |
| Catego | ry B | | | | | | | |
| Idle State | e - WOL En | abled | 5.148W | 5.256W | 5.424 W | Use for Energy Star | V5 registration(P _{idle}) | |
| Sleep (S: | 3) - WOL E | nabled | 0.468 W | 0.480 W | 0.528W | Use for Energy Star | V5 registration(P _{sleep}) | |
| | 3) - WOL D | | 0.760 W | 0.760 W | 0.860 W | Reference | | |
| | · WOL Ena | | 0.348 W | 0.360 W | 0.420 W | Use for Energy Star | V5 registration(P _{r#}) | $+ \exists$ |
| | · WOL Disa | | 0.330W | 0.340 W | 0.400 W | Use for EuP | | ┼∺ |
| EPS No-le | | | 0.058 W | 0.065 W | 0.142 W | | | |
| (External power supply / charger plugged in the wall outlet but disconnected from the product.) | | ne wall | 0.000 W | 0.000 W | 0.142 W | | | |
| TEC Typical E | nergy Cons | sumption | kWh/week | kWh/week | kWh/week | | | |
| ETEC * Annual Ei | nergy Cons | umption | 15.77 kWh/year | 16.13 kWh/year | 16.92 kWh/year | $E_{TEC} = (8760/1000) \times (P_{off} \times 0.6 + P_{sleep} \times 0.1 + P_{idle} \times 0.3)$ | | |
| | | | Poff: Off Mode(S5) - 1 | NOL Enabled; P _{sleep} : S | Sleep Mode(S3) - WOL | Enabled; Pidle: Idle State | - WOL Enabled | |
| Display re | esolution | 1366*768 | Megapixels | | | | | |
| Print Spe | | | | to | | | | |
| • | | | Images per minu ve mode: 25 minute | | | | | |
| P9.2* | | | | | the product | | | |
| - | | | the energy save fund | • | | | | |
| P9.3* | ENERG | Y STAR® | the energy requiren version: <i>Version 5.0</i> ergy Star for Extern |) dated July 1, 200 | Product category: | В | | |
| P10 | Emissio | | | | | | | |
| | Noise er | mission – | Declared according | to ISO 9296 | | | | |
| P10.1 Mode I | | Mode description | | Declared A-weighted sound power | Declared A sound pressure le | 0 | | |
| | | | | | level L _{WAd} (B) | Operator position 🔀 Desktop 🔀 or Desk side 🗌 | Bystander positions (only if product is not operator attended) | t |
| | Idle | * | HDD: Idle | | * 3.0 | 23. | | |
| | Operatio | n * | HDD: Operating | | * 3.0 | 26. | 1 | |
| | Other mo | ode | | | | | | |
| | Measure | d accordir | ng to: 🔀 ISO7779 [Other | ECMA-74 (only if not cover | ed by ECMA-74 wit | h L _{pAm} measurement di | stance m) | |
| P10.2 | 1 | | | requirements of the | | | | |

| Model nu | umber * | Lenovo B4450s | | | | |
|-----------|-----------|--|-------------|-------------|---------|-------------|
| Issue dat | te * | 2013-09-06 Logo | le | | VO. | |
| | | | | | | |
| Product | environ | nental attributes - Market requirements (continued) | R | equire | ment | met |
| Item | | | | Yes | No | n.a. |
| | Chemic | al emissions from printing products | | | | |
| P10.3* | Test per | formed according to ECMA-328 (ISO/IEC 28360) standard 🗌, other specify: | | | | \boxtimes |
| P10.4 | Typical e | emission rate (print phase) is (mg/h): | | | | \boxtimes |
| | | Dust Ozone Styrene Benzene TVOC | | | | |
| P10.5 | Chemica | al emission requirements of the following voluntary program/s are met for : | | | | \boxtimes |
| | [| Dust 🗌 Ozone 🗌 Styrene 🗌 Benzene 🗌 TVOC 🗌 | | | | _ |
| | Electron | magnetic emissions | | | | |
| P10.6 | | er display meets the requirement for low frequency electromagnetic fields of the following vol //s: MPR-II | untary | \boxtimes | | |
| P11 | 1 0 | nable materials for printing products | | | | |
| P11.1* | | / Data Sheet (SDS) is available for the ink/toner preparation, even if not legally required (see | P4.3). | | | |
| P11.2* | | ontaining post-consumer recycled fibers can be used, provided that it meets the require | | | | |
| P11.3* | | (duplex) printing/copying is an integrated product function. | | | | \square |
| P12 | | mics for computing products | | | | |
| P12.1* | | blay meets the ergonomic requirements of ISO 9241-307 for visual display technologies. | | | | |
| P12.2* | | sical input device meets the requirements of ISO 9995 and ISO 9241-410. | | | ┝ | ╞ |
| | 1 2 | | | | | |
| P13.1* | Ŭ | ing and documentation | | | | |
| P13.1 | | packaging material type(s): <i>Corrugated Carton</i> weight (kg): <i>0.320</i> packaging material type(s): <i>Polyethylene Cushions</i> weight (kg): <i>0.030</i> | | | | |
| | | packaging material type(s): <i>Others</i> weight (kg):0.119 | | | | |
| P13.2* | | plastic packaging is free from PVC. | | \boxtimes | | |
| P13.3* | Specify | media for user and product documentation (tick box): | | | | Ħ |
| | Electron | ic 🔀, Paper 🔀, Other 🗌 | | | | |
| P13.4* | For pape | er user and product documentation, please specify contained percentage of post-consumer r % (Japan only 70%) | ecycled | | | |
| P14 | | nal information (See Note B4) | | | | |
| | NOTE: | Supplier makes no representations, guarantees, assurances or warranties whether express | or implied, | regard | ing the | Э |
| | | ion contained in this document. All information provided by supplier in this document is provided | | | | |
| | | ge available at the time of completion, and supplier shall have no obligation to update such in | | | | tion |
| | informat | here is approximate and provided for informational purposes only. See a Lenovo Account R | epresenta | ive for i | nore | |
| P7.17 | | t does not contain free TBBPA in printed circuit boards(without components)>25g. | | | | |
| P9 | | ergy Star Qualified (insert appropriate Product type; i.e. Desktop, Notebook, etc.) for th | e latest in | format | ion: | |
| | | ownloads.energystar.gov/bi/qplist/laptops_prod_list.xls (insert appropriate web url) | e lacor n | .ormat | | |

Note B4: 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 B

| Reference | Declaration item |
|--|------------------------------|
| 2002/95/EC (ROHS Directive) | P1.1, P4.1 |
| REACH, Annex XVII | P1.6, P1.8, P4.2 |
| REACH, Annex XVII | P1.4 |
| REACH, Annex XVII | P1.2 |
| REACH, Annex XVII | P1.7 |
| REACH, Annex XVII | P1.9 |
| Regulation (EC) No. 2037/2000, 2038/2000, 2039/2000 | P1.3 |
| Norwegian regulation relating to restrictions on the use of certain dangerous chemicals 20.12.2002 | P1.5 |
| 2006/66/EC (Battery and accumulators Directive) | P2.1, P2.2, P2,3, P3.4, P8.1 |
| 2006/95/EC (Low Voltage Directive) | P3.1, 3.4 |
| 2004/108/EEC (New EMC Directive) | P3.2, 3.4 |
| 1999/5/EC (R&TTE Directive) | P3.3, 3.4 |
| "REACH" Regulation (1907/2006), annex VII | P1.10 |
| (EC) No.1272/2008 regulation on classification, labeling and packaging (CLP) | P4.3 |
| REACH article 31, annex II | P4.3 |
| 2004/12/EC (Directive on packaging and packaging waste) | P5.1 |
| (97/129/EC) (Commission Decision on Identification System for Packaging Materials | P5.2 |
| 2037/2000/EC Regulation on Substances that Deplete the Ozone Layer | P5.3 |
| 2002/96/EC (WEEE directive) | P3.4, P6.1 |
| (EC) No.1272/2008 regulation on classification, labeling and packaging (CLP) | P7.19 |