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TEO 'Liquid Metal' Cables

Under their skin all hi-fi cables use solid metal strands. TEO Audio sets out to break the mould with its MHD-1 series of 'liquid metal' interconnects and speaker cable
Review and Lab: Paul Miller

Copper is the default choice of conductor for the vast majority of audio cables, offering an unbeatable combination of high conductivity, malleability, purity options and, of course, relatively low price. Silver-plating, pure silver and even gold are used in top-end solutions but these conductors, necessarily, have a fixed crystal structure with fixed, interstitial grain boundaries populated with (semi-conducting) impurities.

The impact these flaws have on sound quality is open to conjecture but it's enough to make the prospect of a 'liquid metal' conductor free of such built-in faults appear quite compelling. By employing an alloy that's still liquid

at room temperature [see boxout, right] TEO Audio now offers a solution, albeit at a price. This alloy does not have the conductivity of copper but its resistance is perfectly manageable, particularly for use in an interconnect.

TEO TIME

All TEO Audio's cables use 16- or 18-gauge conductors, the mobile alloy held captive in a rectangular cross-section medical-grade PTFE tube. Attempts at this process have failed in the past because microscopic pockets of air have entered the tube along with the liquid alloy. Over time these migrate into a single, larger pocket that compromises the conductor. A barbed copper plug is driven into each end of the filled PTFE tube and soldered either to the signal pin of an RCA phono plug (interconnect) or a 4mm spade (speaker cable).

Despite its 'structureless' liquid conductor, TEO's MHD ESR10001 interconnect is still directionally coded. This is because, rather than use a symmetrical geometry with twisted

MERCURY-FREE

Liquid metal conductors – surely TEO Audio is not employing toxic mercury? Thankfully not, instead it has developed a slurry of gallium, indium and tin which forms an alloy mobile down to -19°C. TEO claims the exact proportions differ from the composition of the Galinstan alloy used in children's thermometers and mixes the (horrendously costly) alloy on site from very pure elements.

Gallium (a poor metal with a melting point just above room temperature of 30°C) is obtained as a by-product during the purification of aluminium. Incidentally, Alcan, the largest aluminium producer in Canada, is also based in TEO's town of Kingston, Ontario in Canada.

pairs of 'liquid' conductors, it employs a conventional coaxial return braid made of copper. TEO's own listening tests came out in favour of this 'half-liquid' construction, which should also have put a dent in the price – a whopping £2375 for a 1m set and £4535 for 2m.

MILLIONAIRE ROW

TEO's speaker cable is supplied as separate 'signal' and 'return' lengths, four for a stereo set and each comprising some nine PTFE conductor filaments clamped within a heatshrink/fabric material to reduce microphonic effects. They cost just shy of £10k for a 2m set. The price doubles for lengths beyond 5m as twice as many conductors are required to keep the

LEFT: The Hazmat shipping status of TEO's cables was recently lifted, but the sets are still packed in industrial impact-resistant 'HardBack' cases from Pelican





loop resistance down (about 0.25ohm/2m). A 10m stereo set would cost around £100k!

LIQUID SOUNDS

Arguably, the easiest method of establishing the tenor of an interconnect is by direct comparison with an established reference, in this case a length of Deltec's latest Black Slink which is still a model of neutrality and a clear favourite for over 20 years. I can pay TEO's ESR10001 interconnect no greater compliment than declare how *similar* it sounds to Black Slink, sharing the latter's measured

fretboard brought the guitar to life in front of my eyes, and all warmly counterpointed by the softer resonance of his voice and undercurrent of bass. Did my system benefit from this interchange? Frankly, yes.

With no change in front end (Denon DVD-A1UD), amplification (Krell) or loudspeakers (B&W 802), the addition of TEO's ESR10001 interconnect brought a further separation to complex musical environments, teasing apart tangled rhythms while allowing the natural colour and vibrancy of instruments and vocals alike to express themselves freely.

'The tremulous squeak from the fretboard brought the guitar to life before my eyes'

With all this talk of liquid metal, it's painfully predictable that their sound might be

neutrality with an even greater sense of stage depth, resolution of instrumental ambience and sheer musical impact.

The remastered version of Flim & the BBs' *Tricycle* [DMP SACD-08] sounds spectacular and the inclusion of TEO's ESR10001 only seemed to enhance the rounded, resonant weight of the Alembic basses and Oberheim through 'Lunch Hour Wedding March', the rhythm driven home by both the attack of piano and decorative illumination of percussion.

This subtle spotlighting of complex musical textures was once again audible throughout Paul O'Brien's *Walk Back Home* [Stockfisch SFR 357-4064-2] as the tremulous squeak of his left hand running up the

described in similarly fluid terms. So I'll not disappoint you – the ESR10001 does indeed sound fabulously musical, the performers riding the gentle current of this cable utterly unperturbed to journeys' end.

POWER PLAY

By contrast, the properties of this alloy conductor make it less suitable for use in long speaker cable. The capacitance and inductance of the connection will depend almost entirely on how you dress the conductors – I tested them as very lightly-twisted pairs – but the loop resistance will have an impact beyond one or two metres unless you're using a valve amplifier. Monoblock amplifiers, placed hard up against

the speaker and requiring less than 1m of cable will reveal the MHD/ESL at its best.

The 2.2m ESL20010 speaker cables supplied for review delivered a fundamentally bigger and slightly blowsier sound, not unlike an exaggeration of the interconnect's expositive qualities. Returning to Paul Brian and 'Without a Trace' his voice now lifted further into the room, underlined by an even greater emphasis of those stratchy strings and, perhaps most disappointingly, by a deeper but softer and slightly wallowy bass.

ABOVE: Balanced (analogue and digital – XLRs) and single-ended (Eichmann RCAs) interconnects both use a single 18-gauge core of liquid metal alloy for signal and a copper braid for ground/return (respectively). The plugs are soldered onto barbed copper inserts that make electrical contact with the liquid alloy inside the cable

SURGING BASS

Speakers enjoying less extension than B&W's mighty 802s will inevitably reveal less of this artefact, but the sheer pressure of this deep bass was obvious regardless of my choice in amplifier. Sting's limited-edition *Sacred Love* SACD [A&M 0602498606186] sounded wonderfully open and expressive in its gentler moments ('Send Your Love') but simply got away from itself once the pace picked up ('Inside'), his voice trampled by the keyboards, guitars and piano surging down this liquid metal cable. But what a ride! ☺

HI-FI NEWS VERDICT

If you like your music revealed in Technicolor while wearing the acoustic equivalent of 3D specs, then the ESL20010 speaker cable will have you in hi-fi heaven – just ensure you live with these cables before signing on the dotted line. If you must marry in haste, then the ESR/ESB10001 interconnects are likely to make the more satisfying long term partner and, for the deeply pocketed enthusiast, come heartily recommended.



HI-FI NEWS SPECIFICATIONS

Parallel Capacitance	59pF (1.2m interconnect) / 52pF (2.2m spkr cable)
Series Inductance	1.04µH / 1.64µH
Resistance	370mohm / 237mohm
Price (interconnect) (speaker cable)	£2375/£4535/£10970 1m/2m/5m terminated £9885/£14830/£24720 2m/3m/5m terminated