

The Global Market for Passive Cooling Materials and Technologies 2024-2034

<https://marketpublishers.com/r/GD126295E627EN.html>

Date: October 2023

Pages: 400

Price: US\$ 1,250.00 (Single User License)

ID: GD126295E627EN

Abstracts

Passive cooling utilizes heat dissipation methods without external energy input, relying on conduction, convection and radiation processes. Major markets include building cooling, cold chain logistics, electronics cooling, textiles and personal comfort. Demand is driven by needs for energy efficiency, temperature controlled transport, and thermal management.

The Global Market for Passive Cooling Materials and Technologies 2024-2034 provides a comprehensive analysis of the global passive cooling materials and technologies landscape. It covers key principles like conduction, convection, and radiation that enable passive cooling as well as materials like phase change materials, graphene, carbon nanotubes, aerogels, hydrogels, and metamaterials.

Detailed ten-year market forecasts are segmented by end-use industry, material type, and region provide insights into revenue opportunities. Profiles of over 200 leading companies developing and supplying passive cooling solutions are included along with analyses of product portfolios, partnerships, and R&D priorities.

The report highlights high-potential applications in buildings, electronics, electric vehicles, apparel, cold chain, and energy storage. Comparisons of competing material technologies for thermal management are presented. Current commercial products are benchmarked and technical readiness of emerging solutions is assessed. Report contents include:

Executive summary covering market overview, drivers, emerging materials, electrification impacts, and applications roadma

Materials and technologies analysis of:

Thermal interface materials

Phase change materials

Carbon materials like graphene, nanotubes, nanodiamonds

Aerogels

Hydrogels

Metamaterials

Heat pipes

Radiative cooling

Cooling paints and coatings

Ten-year market forecasts segmented by:

End use industry

Material type

Region

Profiles of over 200 leading companies developing and supplying passive cooling solutions. Companies profiled include AOS Thermal Compounds, Aspen Aerogels, BioLife Solutions, Inc., Boyd Corproation, Cabot Corporation, Dow Corning, Enerdyne Solutions, Enersens, Fujipoly, Guangdong Alison Hi-Tech, Henkel, HyMet Thermal Interfaces SIA, i-TES, Momentive and Radi-Cool.

Analysis of passive cooling applications in buildings, electronics, electric vehicles, apparel, cold chain, and energy storage

Benchmarking of commercial products and assessment of technical readiness of emerging solutions

Comparisons of competing material technologies for thermal management

Contents

1 RESEARCH METHODOLOGY

2 EXECUTIVE SUMMARY

- 2.1 The passive cooling market
 - 2.1.1 Key materials and technologies
- 2.2 Market drivers
- 2.3 Electrification
- 2.4 Emerging materials
- 2.5 Passive versus active cooling
- 2.6 Applications roadmap

3 MATERIALS AND TECHNOLOGIES

- 3.1 Principles employed for cooling or prevention of heating
 - 3.1.1 Conduction
 - 3.1.2 Convection
 - 3.1.3 Radiation
 - 3.1.4 Evaporation
 - 3.1.5 Insulation
 - 3.1.6 Phase change
- 3.2 Thermal interface materials
 - 3.2.1 Types
 - 3.2.2 Thermal conductivity
 - 3.2.3 Comparative properties of TIMs
 - 3.2.4 Advantages and disadvantages of TIMs, by type
 - 3.2.5 Thermal greases and pastes
 - 3.2.6 Thermal gap pads
 - 3.2.7 Thermal gap fillers
 - 3.2.8 Thermal adhesives and potting compounds
 - 3.2.9 Metal-based TIMs
 - 3.2.9.1 Solders and low melting temperature alloy TIMs
 - 3.2.9.2 Liquid metals
 - 3.2.9.3 Solid liquid hybrid (SLH) metals
 - 3.2.9.4 Hybrid liquid metal pastes
 - 3.2.9.5 SLH created during chip assembly (m2TIMs)
- 3.3 Phase change materials

3.3.1 Key properties

3.3.2 Classification

3.3.3 Phase change cooling modes

3.3.4 Types

3.3.4.1 Organic phase change materials

3.3.4.1.1 Paraffin wax

3.3.4.1.1.1 Properties

3.3.4.1.1.2 Advantages and disadvantages

3.3.4.1.1.3 Applications of paraffin PCMs

3.3.4.1.1.4 Commercial paraffin PCM products

3.3.4.1.2 Non-Paraffins (fatty acids, esters, alcohols)

3.3.4.1.2.1 Fatty Acids

3.3.4.1.2.2 Esters

3.3.4.1.2.3 Alcohols

3.3.4.1.2.4 Glycols

3.3.4.1.2.5 Advantages and disadvantages

3.3.4.1.3 Bio-based phase change materials

3.3.4.1.3.1 Fatty Acids

3.3.4.1.3.2 Plant Oils

3.3.4.1.3.3 Agricultural Byproducts

3.3.4.1.3.4 Advantages and disadvantages

3.3.4.1.3.5 Commercial development

3.3.4.2 Inorganic phase change materials

3.3.4.2.1 Salt hydrates

3.3.4.2.1.1 Properties

3.3.4.2.1.2 Applications of Salt Hyhydrate PCMs

3.3.4.2.1.3 Advantages and disadvantages

3.3.4.2.1.4 Commercial Salt Hydrate PCM Products

3.3.4.2.2 Metal and metal alloy PCMs (High-temperature)

3.3.4.2.2.1 Properties

3.3.4.2.2.2 Applications

3.3.4.2.2.3 Advantages and disadvantages

3.3.4.2.2.4 Recent developments

3.3.4.3 Eutectic PCMs

3.3.4.3.1 Eutectic Mixtures

3.3.4.3.2 Examples of Eutectic Inorganic PCMs

3.3.4.3.3 Benefits

3.3.4.3.4 Applications

3.3.4.3.5 Advantages and disadvantages of eutectics

- 3.3.4.3.6 Recent developments
- 3.3.4.4 Encapsulation of PCMs
 - 3.3.4.4.1 Benefits
 - 3.3.4.4.2 Macroencapsulation
 - 3.3.4.4.3 Micro/nanoencapsulation
 - 3.3.4.4.4 Shape Stabilized PCMs
 - 3.3.4.4.5 Commercial Encapsulation Technologies
 - 3.3.4.4.6 Self-Assembly Encapsulation
- 3.3.4.5 Nanomaterial phase change materials
- 3.3.5 SWOT analysis
- 3.4 Carbon materials
 - 3.4.1 Graphene
 - 3.4.1.1 Properties
 - 3.4.1.2 Graphene fillers
 - 3.4.1.3 Graphene foam
 - 3.4.1.4 Graphene aerogel
 - 3.4.2 Carbon Nanotubes
 - 3.4.2.1 Properties
 - 3.4.3 Fullerenes
 - 3.4.4 Nanodiamond
 - 3.4.4.1 Properties
 - 3.4.5 SWOT analysis
- 3.5 Metal Organic Frameworks (MOFs)
 - 3.5.1 SWOT analysis
- 3.6 Heat pipes
 - 3.6.1 Technology description
 - 3.6.2 Operation and use
 - 3.6.3 Flat plate heat pipes and derivatives
 - 3.6.4 Emerging heat pipes
- 3.7 Radiative cooling
 - 3.7.1 Heat sinks
 - 3.7.1.1 Conventional convective heat sinks
 - 3.7.1.2 Benefits
 - 3.7.1.3 Applications
 - 3.7.1.4 Commercial PCM Heat Sinks
 - 3.7.1.5 Advanced heat sinks
 - 3.7.2 Traditional radiative cooling
 - 3.7.3 Radiative cooling of buildings
 - 3.7.3.1 Passive Daytime Radiative Cooling PDRC

3.7.4 Thermal louvers

3.7.5 Anti Stokes fluorescence cooling

3.8 Hydrogels

3.8.1 Structure

3.8.1.1 Hybrid hydrogels

3.8.1.1.1 Nanocomposite hydrogels

3.8.1.1.2 Macromolecular microsphere composite (MMC) hydrogels

3.8.1.1.3 Interpenetrating Polymer Networks (IPN) hydrogels

3.8.1.1.4 Double-network (DN) hydrogels

3.8.2 Classification

3.8.2.1 Based on source

3.8.2.2 Based on composition

3.8.2.3 Based on configuration

3.8.2.4 Based on crosslinking

3.8.2.5 Size

3.8.2.5.1 Microgels

3.8.2.5.2 Nanogels

3.8.2.6 Environmental response

3.8.2.7 Degradability

3.8.3 Formulations

3.8.4 Benefits of hydrogels

3.8.5 Hydrogels for heating and cooling systems (thermal management)

3.8.5.1 Evaporative cooling

3.8.5.2 Hydroceramic hydrogel cooling

3.8.5.3 Cooling of solar panels

3.8.5.4 Hydrogel windows

3.8.5.5 Thermal management in electronics

3.9 Metamaterials

3.9.1 Types and properties

3.9.1.1 Optical Metamaterials

3.9.1.1.1 Photonic metamaterials

3.9.1.1.2 Tunable metamaterials

3.9.1.1.3 Frequency selective surface (FSS) based metamaterials

3.9.1.1.4 Plasmonic metamaterials

3.9.1.1.5 Invisibility cloaks

3.9.1.1.6 Perfect absorbers

3.9.1.1.7 Optical nanocircuits

3.9.1.1.8 Metalenses

3.9.1.1.9 Holograms

- 3.9.1.1.10 Applications
- 3.9.1.2 Electromagnetic metamaterials
 - 3.9.1.2.1 Double negative (DNG) metamaterials
 - 3.9.1.2.2 Single negative metamaterials
 - 3.9.1.2.3 Electromagnetic bandgap metamaterials (EBG)
 - 3.9.1.2.4 Bi-isotropic and bianisotropic metamaterials
 - 3.9.1.2.5 Chiral metamaterials
 - 3.9.1.2.6 Electromagnetic Invisibility cloak
- 3.9.1.3 Radio frequency (RF) metamaterials
 - 3.9.1.3.1 RF metasurfaces
 - 3.9.1.3.2 Frequency selective surfaces
 - 3.9.1.3.3 Tunable RF metamaterials
 - 3.9.1.3.4 RF metamaterials antennas
 - 3.9.1.3.5 Absorbers
 - 3.9.1.3.6 Luneburg lens
 - 3.9.1.3.7 RF filters
 - 3.9.1.3.8 Applications
- 3.9.1.4 Terahertz metamaterials
 - 3.9.1.4.1 THz metasurfaces
 - 3.9.1.4.2 Quantum metamaterials
 - 3.9.1.4.3 Graphene metamaterials
 - 3.9.1.4.4 Flexible/wearable THz metamaterials
 - 3.9.1.4.5 THz modulators
 - 3.9.1.4.6 THz switches
 - 3.9.1.4.7 THz absorbers
 - 3.9.1.4.8 THz antennas
 - 3.9.1.4.9 THz imaging components
- 3.9.1.5 Acoustic metamaterials
 - 3.9.1.5.1 Sonic crystals
 - 3.9.1.5.2 Acoustic metasurfaces
 - 3.9.1.5.3 Locally resonant materials
 - 3.9.1.5.4 Acoustic cloaks
 - 3.9.1.5.5 Hyperlenses
 - 3.9.1.5.6 Sonic one-way sheets
 - 3.9.1.5.7 Acoustic diodes
 - 3.9.1.5.8 Acoustic absorbers
 - 3.9.1.5.9 Applications
- 3.9.1.6 Tunable Metamaterials
 - 3.9.1.6.1 Tunable electromagnetic metamaterials

- 3.9.1.6.2 Tunable THz metamaterials
- 3.9.1.6.3 Tunable acoustic metamaterials
- 3.9.1.6.4 Tunable optical metamaterials
- 3.9.1.6.5 Applications
- 3.9.1.7 Nonlinear metamaterials
- 3.9.1.8 Self-Transforming Metamaterials
- 3.9.1.9 Topological Metamaterials
- 3.9.1.10 Materials used with metamaterials
- 3.9.2 Thermal management
- 3.9.3 Cooling films
- 3.9.4 Optical solar reflection coatings
- 3.10 Passive cooling paints and coatings
 - 3.10.1 Overview
 - 3.10.2 Applications

4 MARKETS

- 4.1 Global revenues
 - 4.1.1 By end use market
 - 4.1.2 By materials
 - 4.1.3 By end use market
- 4.2 Building and construction
 - 4.2.1 Improved energy efficiency
 - 4.2.2 Concrete
 - 4.2.2.1 Benefits
 - 4.2.2.2 Commercial PCM Concrete Products
 - 4.2.3 Wallboards
 - 4.2.3.1 Benefits
 - 4.2.3.2 Commercial PCM Wallboards
 - 4.2.4 Trombe Walls
 - 4.2.4.1 Benefits
 - 4.2.4.2 Products
 - 4.2.5 HVAC
 - 4.2.6 Solar Heating
 - 4.2.7 Solar panels
 - 4.2.8 Multi-mode ICER passive cooling
 - 4.2.9 Panels and blankets
 - 4.2.10 Coatings and paints
- 4.3 Electronics

- 4.3.1 Consumer devices
 - 4.3.1.1 Smartphones and tablets
 - 4.3.1.2 Wearable electronics
- 4.3.2 5G/6G Communications
 - 4.3.2.1 Antenna
 - 4.3.2.2 Base Band Unit (BBU)
- 4.3.3 Data Centers
 - 4.3.3.1 Router, switches and line cards
 - 4.3.3.2 Servers
 - 4.3.3.3 Power supply converters
- 4.4 Apparel
 - 4.4.1 Cooling vests
 - 4.4.2 PCM Medical Textiles
- 4.5 Electric Vehicles (EV)
 - 4.5.1 Applications
 - 4.5.1.1 Lithium-ion batteries
 - 4.5.1.1.1 Cell-to-pack designs
 - 4.5.1.1.2 Cell-to-chassis/body
 - 4.5.1.2 Power electronics
 - 4.5.1.3 Charging stations
 - 4.5.1.4 ADAS Sensors
 - 4.5.1.4.1 ADAS Cameras
 - 4.5.1.4.2 ADAS Radar
 - 4.5.1.4.3 ADAS LiDAR
 - 4.5.1.5 Paint additives
- 4.6 Cold storage transport
 - 4.6.1.1 Temperature-controlled shipping
 - 4.6.1.2 Commercial refrigeration
- 4.7 Thermal storage systems
 - 4.7.1 Water heaters
 - 4.7.2 Thermal batteries for water heaters and EVs
- 4.8 Aerogels
 - 4.8.1 Silica aerogels
 - 4.8.1.1 Properties
 - 4.8.1.1.1 Thermal conductivity
 - 4.8.1.1.2 Mechanical
 - 4.8.1.2 Silica aerogel precursors
 - 4.8.1.3 Products
 - 4.8.1.3.1 Monoliths

- 4.8.1.3.1.1 Properties
- 4.8.1.3.1.2 Applications
- 4.8.1.3.1.3 SWOT analysis
- 4.8.1.3.2 Powder
 - 4.8.1.3.2.1 Properties
 - 4.8.1.3.2.2 Applications
 - 4.8.1.3.2.3 SWOT analysis
- 4.8.1.3.3 Granules
 - 4.8.1.3.3.1 Properties
 - 4.8.1.3.3.2 Applications
 - 4.8.1.3.3.3 SWOT analysis

5 COMPANY PROFILES 210 (206 COMPANY PROFILES)

6 REFERENCES

12. LIST OF TABLES

- Table 1. Key materials and technologies in passive cooling.
- Table 2. Passive cooling market drivers.
- Table 3. Formats of emerging carbon materials and inorganic compounds for passive thermal cooling applications.
- Table 4. Passive versus active cooling.
- Table 5. Functions and materials format.
- Table 6. Thermal conductivities (?) of common metallic, carbon, and ceramic fillers employed in TIMs.
- Table 7. Commercial TIMs and their properties.
- Table 8. Advantages and disadvantages of TIMs, by type.
- Table 9. Characteristics of some typical TIMs.
- Table 10. PCM Types and properties.
- Table 11. Advantages and disadvantages of paraffin wax PCMs.
- Table 12. Advantages and disadvantages of non-paraffins.
- Table 13. Advantages and disadvantages of Bio-based phase change materials.
- Table 14. Advantages and disadvantages of salt hydrates
- Table 15. Advantages and disadvantages of low melting point metals.
- Table 16. Advantages and disadvantages of eutectics.
- Table 17. Comparisons of silicone vs. carbon-based polymers for passive cooling.
- Table 18. Properties of graphene, properties of competing materials, applications thereof.

Table 19. Properties of CNTs and comparable materials.
Table 20. Properties of nanodiamonds.
Table 21. Common hydrogel formulations.
Table 22. Benefits of hydrogels.
Table 23. Hydrogel panel.
Table 24. Optical Metamaterial Applications.
Table 25. Applications of radio frequency metamaterials.
Table 26. Applications of acoustic metamaterials.
Table 27. Types of tunable terahertz (THz) metamaterials and their tuning mechanisms.
Table 28. Tunable acoustic metamaterials and their tuning mechanisms.
Table 29. Types of tunable optical metamaterials and their tuning mechanisms.
Table 30. Markets and applications for tunable metamaterials.
Table 31. Types of self-transforming metamaterials and their transformation mechanisms.
Table 32. Key materials used with different types of metamaterials.
Table 33. Global revenues for passive cooling materials, 2018-2034, by market (billion USD).
Table 34. Global revenues for passive cooling materials, 2018-2034, by materials (billion USD).
Table 35. Global revenues for passive cooling materials, 2018-2034, by region (billion USD).
Table 36. Market assessment for PCMs in building and construction-market age, applications, key benefits and motivation for use, market drivers and trends, market challenges.
Table 37. Market overview of aerogels in paints and coatings-market drivers, types of aerogels utilized, motivation for use of aerogels, applications, TRL.
Table 38. Commercially available PCM cooling vest products.
Table 39. PCMs used in cold chain applications.
Table 40. Market assessment for phase change materials in packaging and cold chain logistics-market age, applications, key benefits and motivation for use, market drivers and trends, market challenges.
Table 41. Market assessment for PCMs in refrigeration systems -market age, applications, key benefits and motivation for use, market drivers and trends, market challenges.
Table 42. Key properties of silica aerogels.
Table 43. Chemical precursors used to synthesize silica aerogels.
Table 44. Carbodeon Ltd. Oy nanodiamond product list.
Table 45. CrodaTherm Range.
Table 46. Ray-Techniques Ltd. nanodiamonds product list.

Table 47. Comparison of ND produced by detonation and laser synthesis.

12. LIST OF FIGURES

Figure 1. SWOT analysis for the passive cooling market.

Figure 2. Passive cooling applications roadmap.

Figure 3. SWOT analysis for Silicone thermal conduction materials for passive cooling.

Figure 4. (L-R) Surface of a commercial heatsink surface at progressively higher magnifications, showing tool marks that create a rough surface and a need for a thermal interface material.

Figure 5. Schematic of thermal interface materials used in a flip chip package.

Figure 6. Thermal grease.

Figure 7. Dispensing a bead of silicone-based gap filler onto the heat sink of a power electronics module.

Figure 8. Application of thermal silicone grease.

Figure 9. A range of thermal grease products.

Figure 10. Thermal Pad.

Figure 11. Dispensing a bead of silicone-based gap filler onto the heat sink of a power electronics module.

Figure 12. Thermal tapes.

Figure 13. Thermal adhesive products.

Figure 14. Typical IC package construction identifying TIM1 and TIM2

Figure 15. Liquid metal TIM product.

Figure 16. Pre-mixed SLH.

Figure 17. HLM paste and Liquid Metal Before and After Thermal Cycling.

Figure 18. SLH with Solid Solder Preform.

Figure 19. Automated process for SLH with solid solder preforms and liquid metal.

Figure 20. Classification of PCMs.

Figure 21. Phase-change materials in their original states.

Figure 22. SWOT analysis for phase change materials for passive cooling.

Figure 23. Graphene layer structure schematic.

Figure 24. Illustrative procedure of the Scotch-tape based micromechanical cleavage of HOPG.

Figure 25. Graphene and its descendants: top right: graphene; top left: graphite = stacked graphene; bottom right: nanotube=rolled graphene; bottom left: fullerene=wrapped graphene.

Figure 26. Schematic diagram of a multi-walled carbon nanotube (MWCNT).

Figure 27. Detonation Nanodiamond.

Figure 28. DND primary particles and properties.

Figure 29. SWOT analysis for carbon materials for passive cooling.

Figure 30. SWOT analysis for Metal Organic Frameworks (MOFs) for passive cooling.

Figure 31. Fujitsu loop heat pipe.

Figure 32. Samsung Galaxy vapor chamber.

Figure 33. Structure of hydrogel.

Figure 34. Classification of hydrogels based on properties.

Figure 35. Preparation and potential biomedical applications of click hydrogels, microgels and nanogels.

Figure 36. Layered Hydrogel between Wall Panels.

Figure 37. IaaC Students Develop a Passive Cooling System from Hydrogel and Ceramic.

Figure 38. Classification of metamaterials based on functionalities.

Figure 39. Invisibility cloak.

Figure 40. Electromagnetic metamaterial.

Figure 41. Schematic of Electromagnetic Band Gap (EBG) structure.

Figure 42. Schematic of chiral metamaterials.

Figure 43. Metamaterial antenna.

Figure 44. Terahertz metamaterials.

Figure 45. Schematic of the quantum plasmonic metamaterial.

Figure 46. Properties and applications of graphene metamaterials.

Figure 47. Nonlinear metamaterials- 400-nm thick nonlinear mirror that reflects frequency-doubled output using input light intensity as small as that of a laser pointer.

Figure 48. Radi-cool metamaterial film.

Figure 49. Schematic of dry-cooling technology.

Figure 50. Global revenues for passive cooling materials, 2018-2034, by market (billion USD).

Figure 51. Global revenues for passive cooling materials, 2018-2034, by materials (billion USD).

Figure 52. Global revenues for passive cooling materials, 2018-2034, by region (billion USD).

Figure 53. Global energy consumption growth of buildings.

Figure 54. Energy consumption of residential building sector.

Figure 55. Schematic of PCM use in buildings.

Figure 56. Comparison of the maximum energy storage capacity of 10 mm thickness of different building materials operating between 18 °C and 26 °C for 24 h.

Figure 57. Schematic of TIM operation in electronic devices.

Figure 58. Schematic of Thermal Management Materials in smartphone.

Figure 59. Wearable technology inventions.

Figure 60. TIMs in Base Band Unit (BBU).

Figure 61. Image of data center layout.

Figure 62. Application of TIMs in line card.

Figure 63. PCM cooling vest.

Figure 64. Application of thermal interface materials in automobiles.

Figure 65. EV battery components including TIMs.

Figure 66. Battery pack with a cell-to-pack design and prismatic cells.

Figure 67. Cell-to-chassis battery pack.

Figure 68. TIMS in EV charging station.

Figure 69. ADAS radar unit incorporating TIMs.

Figure 70. Schematic of PCM in storage tank linked to solar collector.

Figure 71. Flower resting on a piece of silica aerogel suspended in mid air by the flame of a bunsen burner.

Figure 72. Monolithic aerogel.

Figure 73. SWOT analysis for monolith aerogels.

Figure 74. SWOT analysis for powder aerogels.

Figure 75. Aerogel granules.

Figure 76. Internal aerogel granule applications.

Figure 77. SWOT analysis for granule aerogels.

Figure 78. Thermal Conductivity Performance of ArmaGel HT.

Figure 79. SLENTEX® roll (piece).

Figure 80. Ultraguard -70°C Phase Change Material (PCM) being loaded into a Stirling Ultracold ULT25NEU portable freezer.

Figure 81. Solid State Reflective Display (SRD®) schematic.

Figure 82. Transtherm® PCMs.

Figure 83. Carbice carbon nanotubes.

Figure 84. Internal structure of carbon nanotube adhesive sheet.

Figure 85. Carbon nanotube adhesive sheet.

Figure 86. HI-FLOW Phase Change Materials.

Figure 87. Kaneka phase change materials.

Figure 88. Thermoelectric foil, consists of a sequence of semiconductor elements connected with conductive metal. At the top (in red) is the thermal interface.

Figure 89. Cr?do™ ProMed transport bags.

Figure 90. Metamaterial structure used to control thermal emission.

Figure 91. Shinko Carbon Nanotube TIM product.

Figure 92. The Sixth Element graphene products.

Figure 93. Thermal conductive graphene film.

Figure 94. Quartzene®.

Figure 95. VB Series of TIMS from Zeon.

I would like to order

Product name: The Global Market for Passive Cooling Materials and Technologies 2024-2034

Product link: <https://marketpublishers.com/r/GD126295E627EN.html>

Price: US\$ 1,250.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/GD126295E627EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:
Last name:
Email:
Company:
Address:
City:
Zip code:
Country:
Tel:
Fax:
Your message:

****All fields are required**

Customer signature _____

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below and fax the completed form to +44 20 7900 3970