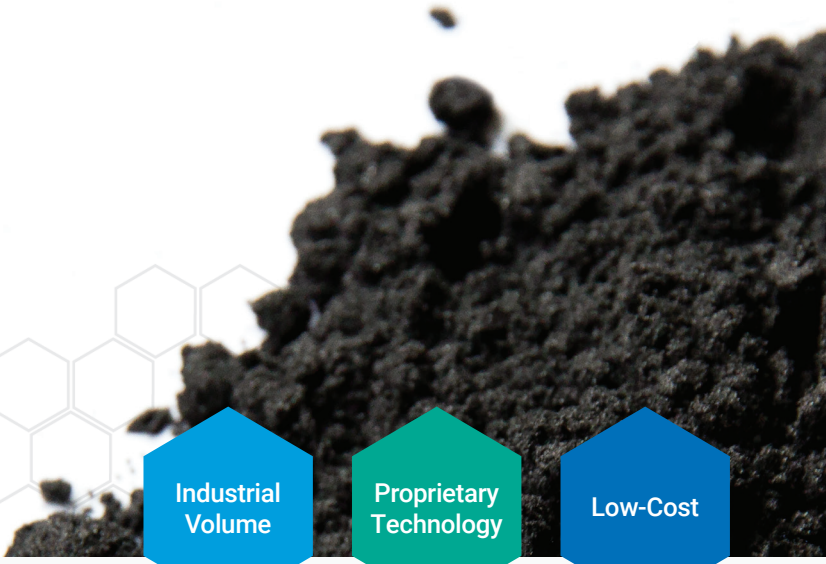
Performance Through Carbon Chemistry

NEXT-GEN PLASTIC PIPING

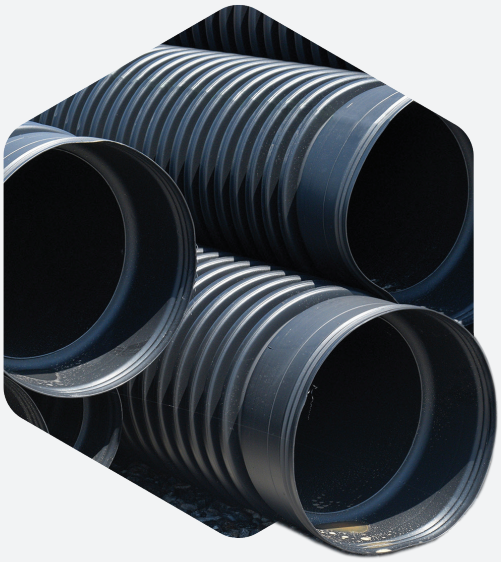
GRAPHENEBLACK™
A Product of NANOXPLORE



Industrial Volume

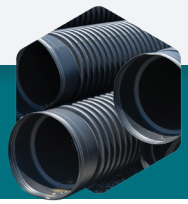
Proprietary Technology

Low-Cost



A revolutionary additive for today's plastic pipe manufacturers

GrapheneBlack™ is a market-ready additive that can provide uncompromised improvements in all major performance metrics.
These metrics include UV resistance, processability, mechanical properties and ultimate strength, oxidation resistance, and long term durability to meet industry requirements. GrapheneBlack™ enhanced polyethylene provides a unique opportunity to enable manufacturers to reach the next level of long term performance and cost reduction with virgin and recycled resins.



GrapheneBlack™ provides across-the-board improvements for plastic pipe manufacturers:

Cost Reduction

Reduces costs by increasing the use of recycled resins and decreasing the amount of other additives required. It further improves processability by reducing energy consumption.

UV Resistance

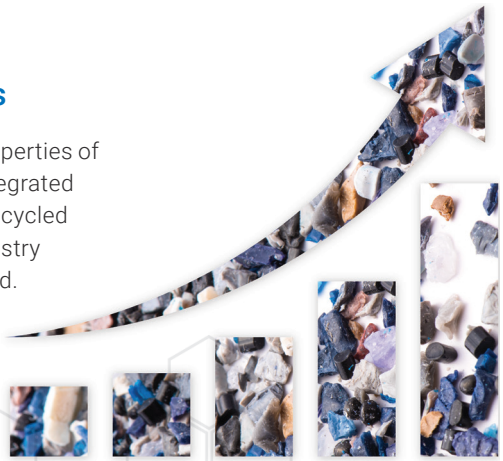
Prevent UV degradation with 0.5 wt.% of graphene loading.

Increase Recycled Resins

Given the exquisite properties of GrapheneBlack™-integrated materials, the use of recycled resins for the pipe industry is remarkably increased.

Processability

Facilitates extrusion by reducing undesired shear and melt temperature without compromising melt flow rate for increased throughput resulting in reduced energy costs.



Durability

100% increase in oxidativeinduction time with 1 wt.% graphene

Improves resistance to oxidative degradation and makes products last longer.

Mechanical Properties

15% increase in Young's Modulus and tensile strength with 1 wt.% graphene

Increases stiffness and ultimate tensile strength to meet mechanical strength requirements.

Barrier Properties

28% improvement in oxygen impermeability with 1 wt.% graphene

A permanent non-depleting physical barrier to oxygen, humidity, hydrocarbons and harsh chemicals. Unlike common additives, GrapheneBlack™ is not consumed over time.

Thermal Stability

3°C increase in heat deflection temperature and 8°C increase in decomposition temperature with 1 wt.% graphene

Higher thermal stability leads to increased reliability and improved performance in end products.

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ABOUT NANOXPLORE

TSX.V: GRA | OTCQX: NNXPF

NanoXplore is a graphene company, a manufacturer, and supplier of high-volume graphene powder for use in industrial markets. We provide standard and custom graphene-enhanced plastic and composite products to various customers in transportation, packaging, electronics, and other industrial sectors. We are headquartered in Montreal, Quebec, with nearly 350 employees supporting manufacturing facilities across Canada, the U.S., and Switzerland.

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