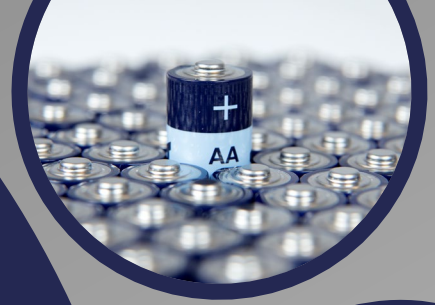
Octet Scientific

Better Chemistry for Tomorrow's Best Batteries

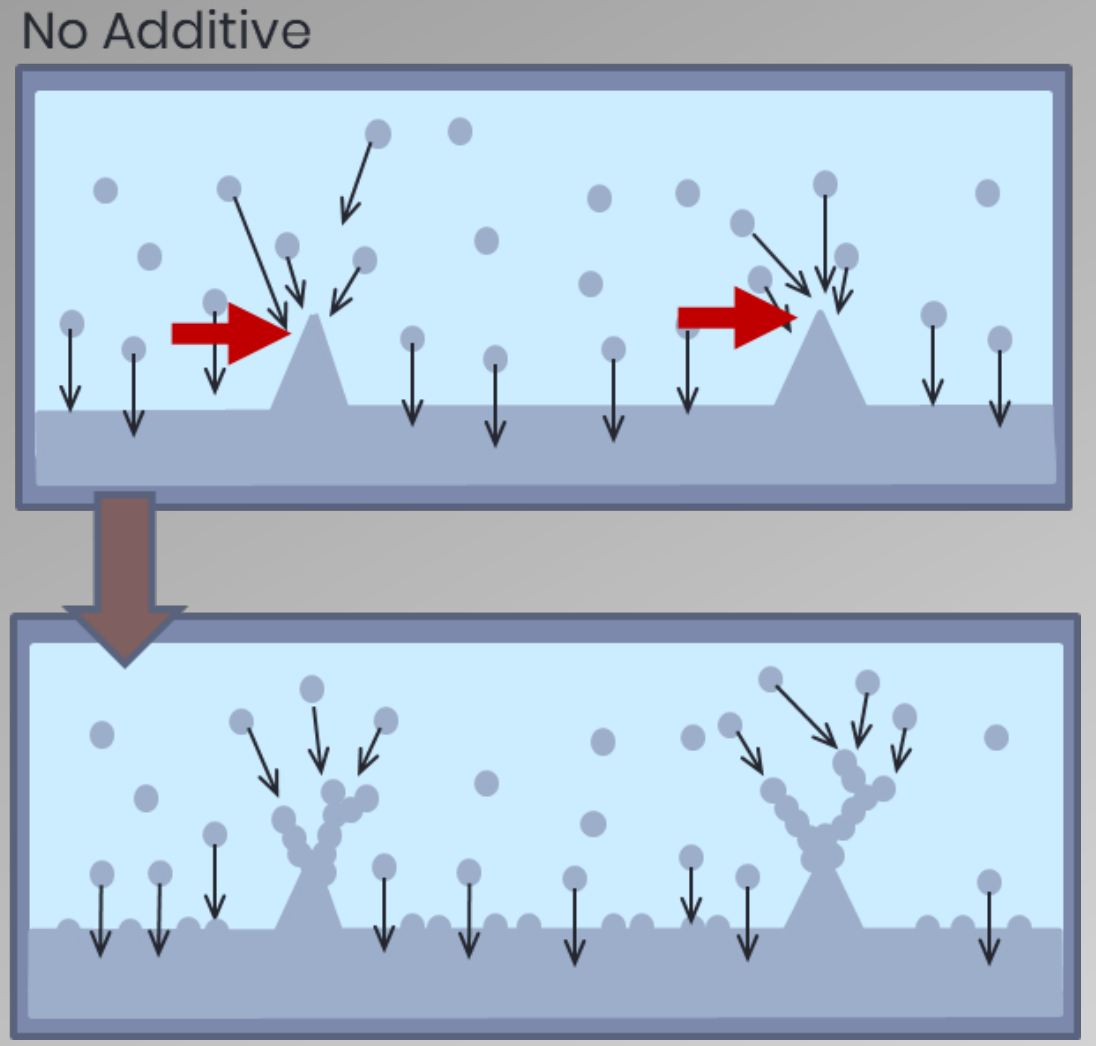
Onas Bolton, CEO & Founder



Electrolyte is Important

Bad things can happen at the zinc surface:

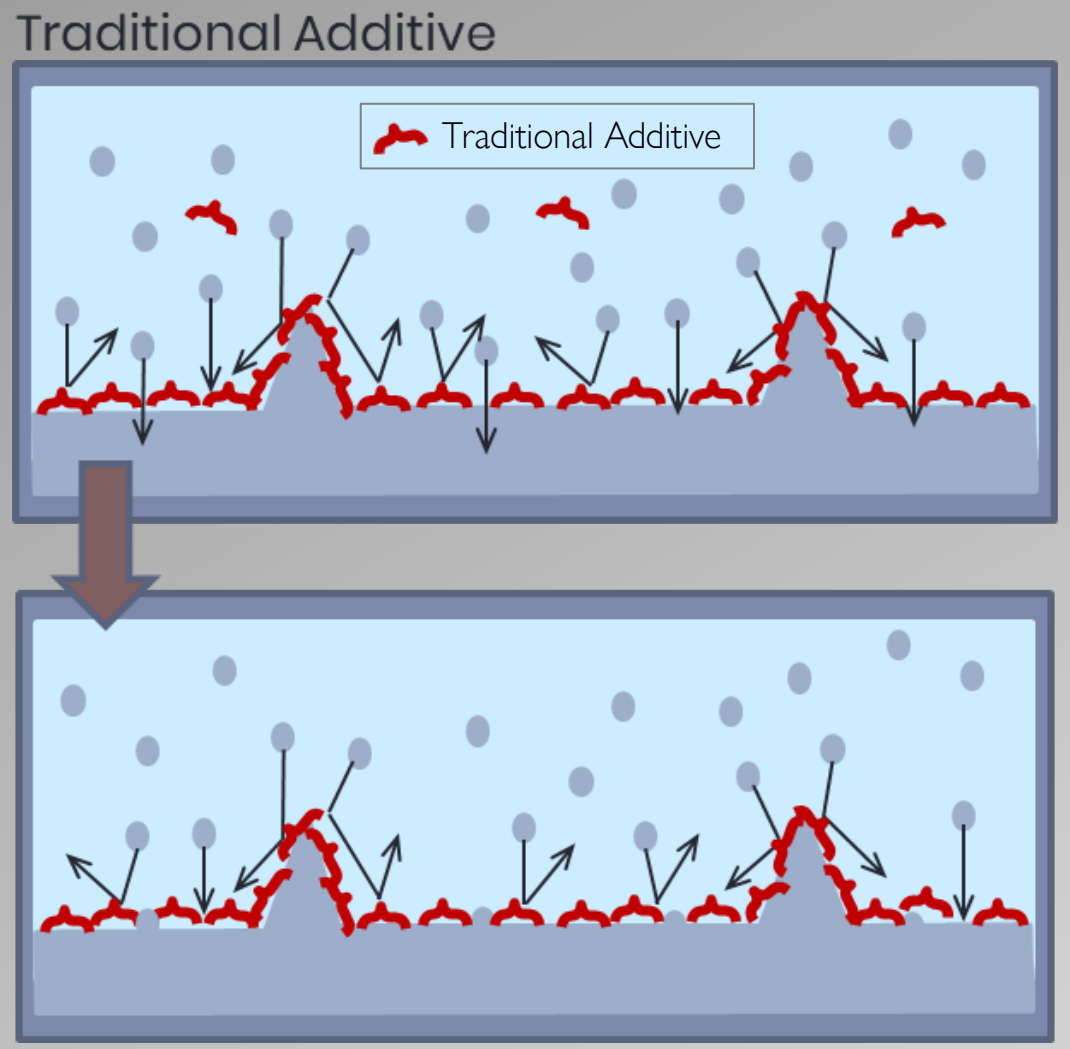
- Dendrites
- Corrosion
- Gas formation
- Self-discharge
- Shape change



Additives can Help… or Hurt!

Bad things can also happen when use the wrong additives:

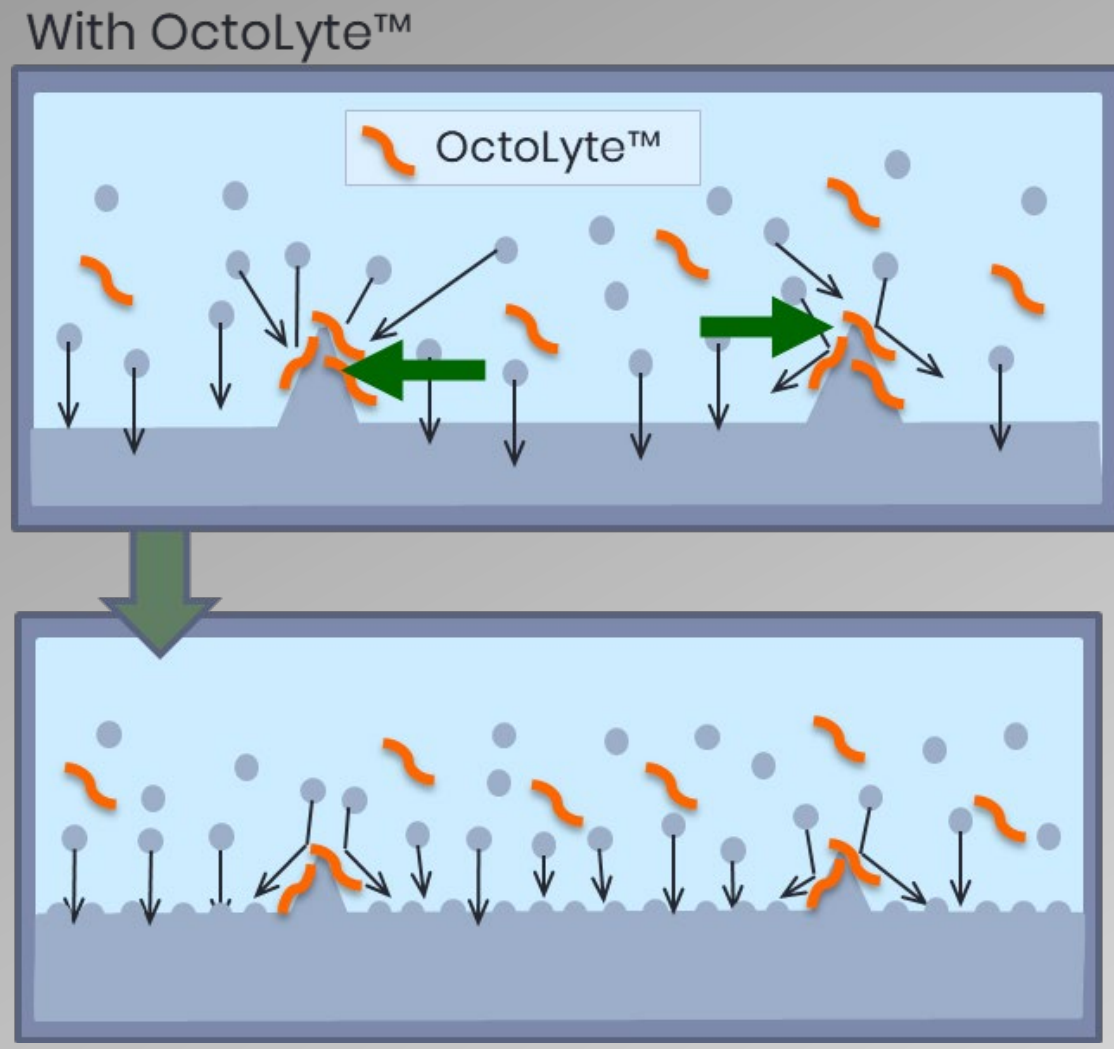
- Increased polarization
  → loss of energy, power
- Additional side reaction
  → loss of efficiency, lifetime
- Plating out / instability
  → ineffective throughout charge
- Implementation challenges



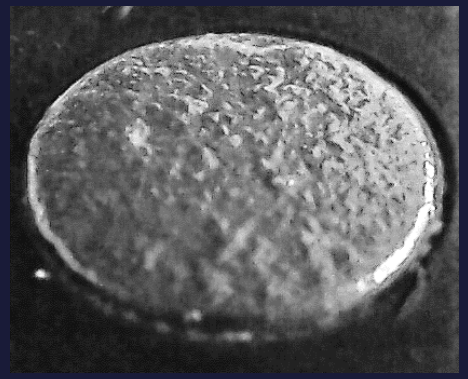
OctoLyte™ is Designed for Zinc Batteries

Very *good* things can happen when you use the *right additive*:

- Dendrites stopped
  → more cycle-life
- Corrosion / gas controlled
  → more shelf life & efficiency
- Better plating / Zinc utilization
  → more energy
- Works throughout charge and throughout lifetime



Our Products: OctoLyte™



OctoLyte Z3

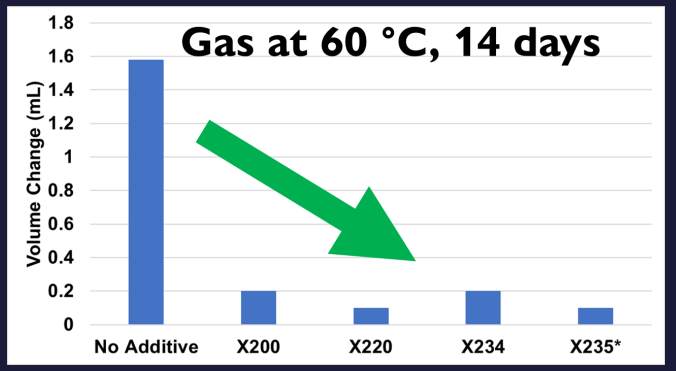
Superior dendrite control for most markets

Our Gen1 product

OctoLyte Z6

Exceptional plating control and stability in cells in grid and stationary applications

Currently scaling to ton scale



OctoLyte Z7

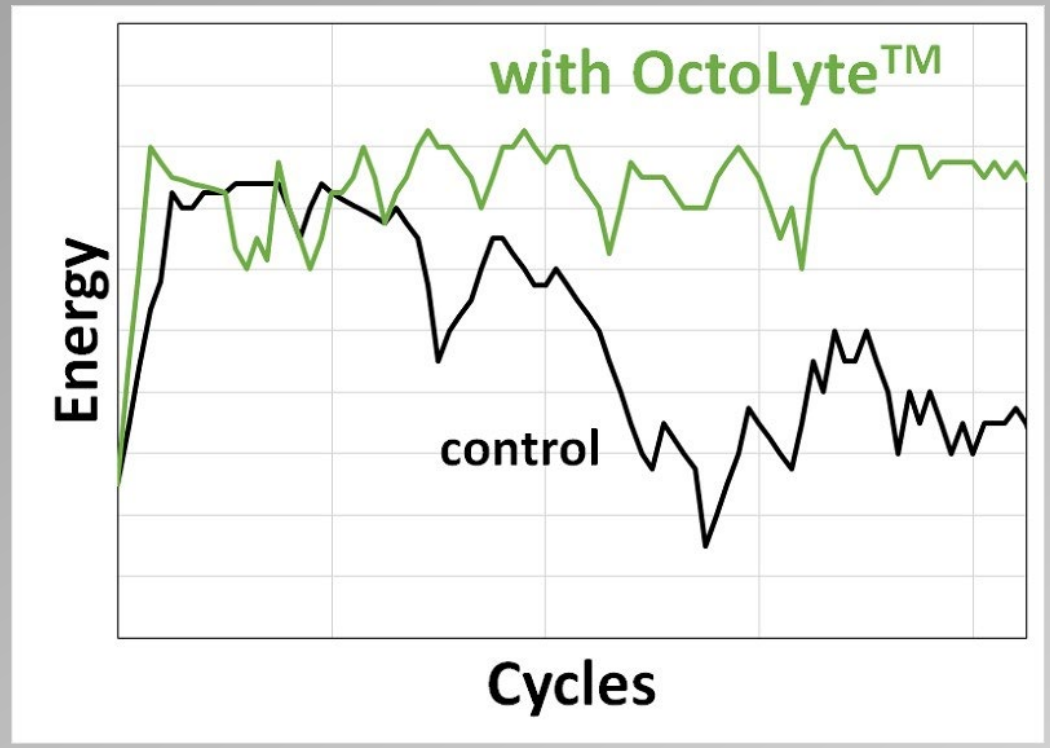
Unprecedented gas and corrosion control for cells in all markets

Impressing in field tests

OctoLyte™ Z6

- ✓ Highly stable in electrolyte
- ✓ Non-hazardous
- ✓ Shelf stable
- ✓ Easy to implement
- ✓ Commercial scale available

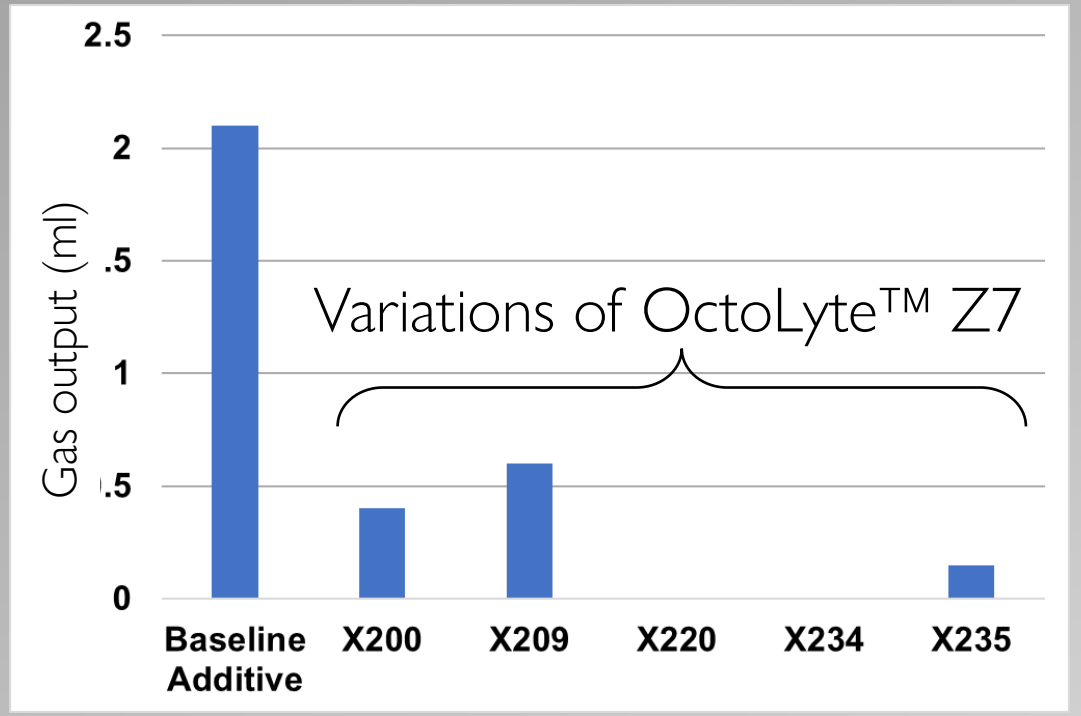
Increases energy, expands operating capability, and cycle life



OctoLyte™ Z7

- ✓ Prevents corrosion
- ✓ Prevents gassing
- ✓ Prevents self-discharge
- ✓ Lowers polarization
- ✓ Easy to implement
- ✓ Commercial scale-up initiated

Increases battery energy access, improves efficiency, and extends lifetime.



Molecular-level Additive Evaluation

We're Organic Chemistry Experts

Chemical Analysis

- NMR
- pH & chemical stability
- Solubility & temp range
- GC, AA, MALDI, GPC avail.

Rapid bench testing

- Gassing
- Corrosion
- Compatibility
- pH

and Electrochemistry Experts!

Electrochemical analysis

- Tafel
- EIS
- Plating quality
- Linear scan voltammetry

Coin cells

- Cycle life
- Coulombic efficiency
- Nucleation overpotential
- Postmortem visual & material analyses

Octet Scientific

Unique Expertise to Discover and Scale

Onas Bolton, PhD
Founder & CEO

- 15 yrs specialty chemicals,
- Product dev. in electroplating at Atotech
- 5 patents + 5 pending

James Vaughn, PhD
COO

- 31 yrs specialty chemicals
- CEO Philpott (chemicals)
- Global Biz Dir at Omnova
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- Quality & Tech manager at GE

Mark Rubino, PhD
Director of Chemistry

- 36 yrs specialty chemical scale-up,
- Vertellus (now Aurorium)
- Cambrex
- Aristech (now Sunoco)

Emily Dickens, MEM
CCO

- Battery R&D in US and Europe
- 5 yrs in Zinc Battery electrolytes
- Supply chains roles at GE (Current)
- Led testing of first OctoLytes™

Akash Kota, PhD
Senior Electrochemist

- U. of Dayton PhD
- Thesis on printed Zinc Batteries
- Book author on Silver-Zinc batteries

Product Design

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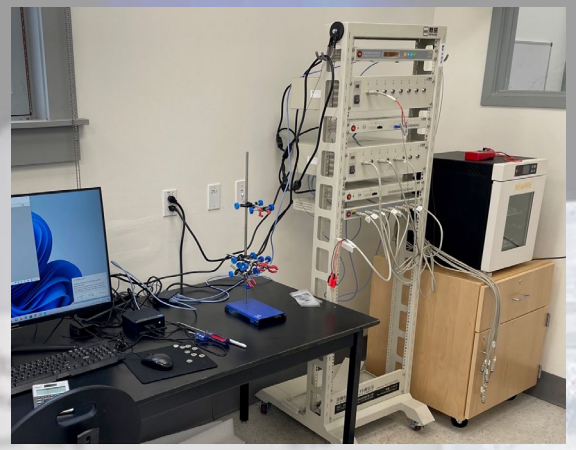
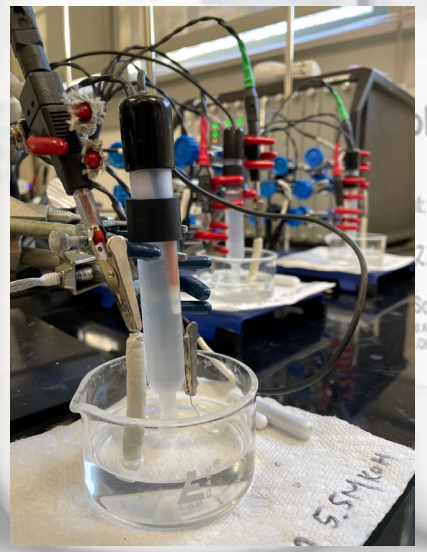
Optimizing Electrolytes, Delivering Solutions





- Full synthetic organic capabilities
- Molecular-level electrochemical analysis
- Partnerships in place for rapid scale-up to kg
- Tonnage available in Q1 2024

Example: Zinc + OctoLyte™ on the Grid

Long Duration Grid Scale Comparison	Lithium-LFP	Zinc	Zinc with OctoLyte™	
Energy Block ($/kWh)	$ 170.36	$ 212.58	25% Improved	$ < 170
Total Installed ($/kWh)	$ 376.67	$ 369.96	25% Improved	$ < 300
O&M ($/kW/year)	$ 9.87	$ 10.38	25% improved	$ < 9.00
RTE (%)	83%	74%	15% Improved	85%
Cycle Life	2400	6508	100% Improved	> 13,000
Cell Energy Density (Wh/kg)	300	150	25% Improved	188
Site Energy Density (Wh/kg/area)	600 2-unit base	600* (4:2) 1200* (8:2)	25% Improved	750* (4:2) 1500* (8:2)
LCOS ($/kWh)	$ 0.143	$ 0.15	25% Impr. CAPEX 100% Improved life	$ < 0.07**

Technology cost comparison from Pacific Northwest National Lab (PNNL) and DOE Office of Electricity
"Zinc with OctoLyte™" estimates based on internal and field trials

* Non-flammability allows unit stacking for greater site energy density vs lithium-ion
** LCOS based on PNNL data adjusted for cycle life, O&M, and efficiency improvements

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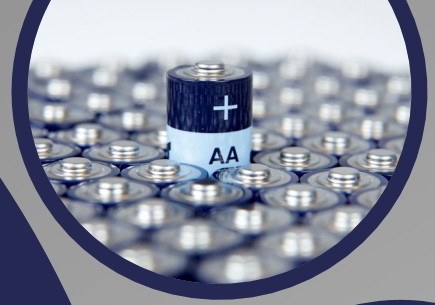
Where can OctoLyte™ take your batteries?



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