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ZINC STEARATE (MICRONISED)

PVC COMPOUNDING (RIGID & SEMI-RIGID GRADES)

1) Identification & Chemical Information

Item	Details
CAS Number	**557-05-1**
IUPAC Chemical Name	Zinc bis(octadecanoate)
Common Industry / Trade Synonyms	Zinc stearate; Zinc octadecanoate; Stearic acid, zinc salt

2) Physical and Chemical Properties

Property	Description
Appearance	White to off-white fine powder
Density	~1.09–1.15 g/cm^3
Melting Range	120–130 °C
Solubility	Insoluble in water; dispersible in PVC systems
Particle Size Distribution (Micronised Grade)	D50: 3–7 µm / D90: <15 µm / D99: <25 µm

3) Application-Specific Technical Discussion

3.1 Specific Benefits

Zinc stearate is selected in rigid and semi-rigid PVC compounding where controlled lubrication and processing balance are required without adversely affecting fusion or surface quality.

- Improved internal lubrication during PVC fusion
- Reduced melt friction at metal processing surfaces
- Support for stable torque and temperature control during compounding
- Cleaner processing with reduced tendency for plate-out

3.2 End Uses

- Rigid PVC profiles and sheets
- Semi-rigid PVC films and calendered products
- PVC pipes and fittings
- Injection-moulded rigid PVC components
- Technical PVC compounds requiring controlled lubrication

3.3 Key Physical, Chemical & Performance Parameters

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- Metal soap molecular structure
- Melting range compatible with PVC processing temperatures
- Controlled migration behaviour within PVC melt
- Hydrophobic character limiting moisture interaction
- Low water solubility

3.4 Known Limitations

- Not a standalone heat stabiliser for PVC systems
- Dosage must be balanced to avoid interference with PVC fusion behaviour
- Performance influenced by stabiliser package and processing conditions

4) Regulatory Note

Regulatory status depends on grade, purity, and intended use. Food-contact and regional compliance listings, where applicable, are addressed in separate regulatory documentation.

5) Disclaimer

Information provided for technical reference only.
No warranty of fitness for a particular purpose.
User responsible for validation, trials, and regulatory compliance.

6) Creation and Review

Creation: January 2026
Next Technical Review: January 2028

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