OVD properties: Divvy 'em up

Cohesive OVD	Dispersive OVD
Molecular weight: *High*	
	Molecular weight: *Low*
Molecule length: *Long*	
	Molecule length: *Short*
Self-adheres *well*	
	Self-adheres *poorly*
Surface tension: *High*	
	Surface tension: *Low*
Easy to aspirate	
	Difficult to aspirate
Maintains space *well*	
	Maintains space *poorly*
Coats structures *poorly*	
	Coats structures *well*
Viscosity: *High*	
	Viscosity: *Low*

Q

OVD properties: Divvy 'em up

Cohesive OVD

Dispersive OVD

Molecular weight: *High*

Before we start: In this context, what does OVD *stand for?*

Molecule length: *Short*

Self-adheres *well*

Self-adheres *poorly*

Surface tension: *High*

Surface tension: *Low*

Easy to aspirate

Difficult to aspirate

Maintains space *well*

Maintains space *poorly*

Coats structures *poorly*

Coats structures *well*

Viscosity: *High*

Viscosity: *Low*

A

OVD properties: Divvy 'em up

Cohesive OVD	Dispersive OVD
Molecular weight: *High*	
Molecule length: *Short*	
Self-adheres *well*	
Self-adheres *poorly*	
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Easy to aspirate	
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Coats structures *well*	
Viscosity: *High*	
Viscosity: *Low*	

Before we start: In this context, what does OVD *stand for?*
Ophthalmic viscosurgical device

Q

OVD properties: Divvy 'em up

Cohesive OVD

Dispersive OVD

OK, start divvying (do these two simultaneously)

Molecular weight: *High*

Molecular weight: *Low*

Molecule length: *Long*

Molecule length: *Short*

Self-adheres *well*

Self-adheres *poorly*

Surface tension: *High*

Surface tension: *Low*

Easy to aspirate

Difficult to aspirate

Maintains space *well*

Maintains space *poorly*

Coats structures *poorly*

Coats structures *well*

Viscosity: *High*

Viscosity: *Low*

Q/A

OVD properties: Divvy 'em up

Cohesive OVD

Molecular weight: *High*

Dispersive OVD

Molecular weight: *Low*

Now these

- Molecule length: *Long*
- Molecule length: *Short*
- Self-adheres *well*
- Self-adheres *poorly*
- Surface tension: *High*
- Surface tension: *Low*
- *Easy* to aspirate
- *Difficult* to aspirate
- Maintains space *well*
- Maintains space *poorly*
- Coats structures *poorly*
- Coats structures *well*
- Viscosity: *High*
- Viscosity: *Low*

Q/A

OVD properties: Divvy 'em up

Cohesive OVD

Molecular weight: *High*

Molecule length: *Long*

Dispersive OVD

Molecular weight: *Low*

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etc
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Surface tension: *High*

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Easy to aspirate

Difficult to aspirate

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Q/A

OVD properties: Divvy 'em up

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Molecular weight: *High*

Molecule length: *Long*

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Dispersive OVD

Molecular weight: *Low*

Molecule length: *Short*

Self-adheres *poorly*

Surface tension: *High*

Surface tension: *Low*

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Difficult to aspirate

Maintains space *well*

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In the context of OVDs, to what does the term viscosity *refer?*

A

OVD properties: Divvy 'em up

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In the context of OVDs, to what does the term viscosity *refer?*
Viscosity refers to how a substance responds to shear force

Q

OVD properties: Divvy 'em up

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With respect to OVDs, what two 'shear force scenarios' are we concerned with?

--
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A

OVD properties: Divvy 'em up

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Maintains

Coats struct

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With respect to OVDs, what two 'shear force scenarios' are we concerned with?

--**Zero** shear
--**High** shear

Q

OVD properties: Divvy 'em up

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With respect to OVDs, what two 'shear force scenarios' are we concerned with?
Which intraoperative steps provide a ready example of each?
--**Zero** shear**:**
--**High** shear**:**

A

OVD properties: Divvy 'em up

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In the context of OVDs, to what does the term viscosity *refer?*
Viscosity refers to how a substance responds to shear force

With respect to OVDs, what two 'shear force scenarios' are we concerned with?
Which intraoperative steps provide a ready example of each?
--**Zero** shear**:** Capsulorrhexis
--**High** shear**:** Phacoemulsification, or I&A

Think of the OVD molecules as pasta.

Cohesive OVD

Molecular weight: *High*

Molecule length: *Long*

Self-adheres *well*

Surface tension: *High*

Easy to aspirate

Maintains space *well*

Coats structures *poorly*

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Dispersive OVD

Molecular weight: *Low*

Molecule length: *Short*

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Surface tension: *Low*

Difficult to aspirate

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Coats structures *well*

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Now consider serving spaghetti vs macaroni. Because spaghetti strands are long, they entangle with and adhere to one another.

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Molecular weight: *Low*

Molecule length: *Short*

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Surface tension: *Low*

Difficult to aspirate

Maintains space *poorly*

Coats structures *well*

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Surface tension: *High*

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Maintains space *well*

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Viscosity: *High*

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Molecular weight: *Low*

Molecule length: *Short*

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In contrast, because macaroni are so short, they **don't** entangle and **don't** adhere to one another.

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So it is with OVDs. Cohesives, with their long entangled molecules, tend to come out of the eye as a single glob

Dispersive OVD

Molecular weight: *Low*

Molecule length: *Short*

Self-adheres *poorly*

Surface tension: *Low*

Difficult to aspirate

Maintains space *poorly*

Coats structures *well*

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Cohesive OVD

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So it is with OVDs. Cohesives, with their long entangled molecules, tend to come out of the eye as a single glob, whereas the short-chained dispersives have to be removed piecemeal.

Dispersive OVD

Molecular weight: *Low*

Molecule length: *Short*

Self-adheres *poorly*

Surface tension: *Low*

***Difficult* to aspirate**

Maintains space *poorly*

Coats structures *well*

Viscosity: *Low*

Cohesive OVD

Molecular weight: *High*

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In like fashion, the non-self-adhering dispersives do an excellent job coating intraocular structures

Dispersive OVD

Molecular weight: *Low*

Molecule length: *Short*

Self-adheres *poorly*

Surface tension: *Low*

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So it is with OVDs. Cohesives, with their long entangled molecules, tend to come out of the eye as a single glob, whereas the short-chained dispersives have to be removed piecemeal.

In like fashion, the non-self-adhering dispersives do an excellent job coating intraocular structures, whereas their self-adherence renders cohesives unsuitable for this.

Dispersive OVD

Molecular weight: *Low*

Molecule length: *Short*

Self-adheres *poorly*

Surface tension: *Low*

***Difficult* to aspirate**

Maintains space *poorly*

Coats structures *well*

Viscosity: *Low*