

Plastics Composition and Restricted Materials

RoHS, REACH, Prop 65, POP

Presented by:
Bruce Calder
VP Consulting Services



Overview - Agenda - REACH SVHC Database

- Introduction
- SCIP Database
 - Reminder
- Materials in plastics
 - Example product (PVC jacket)
 - Polymer
 - Plasticizer
 - Flame retardant
 - Filler
 - Pigments (and chemicals inside pigments)
 - Stabilizers
 - Anti-oxidants
 - Lubricants
- Q&A



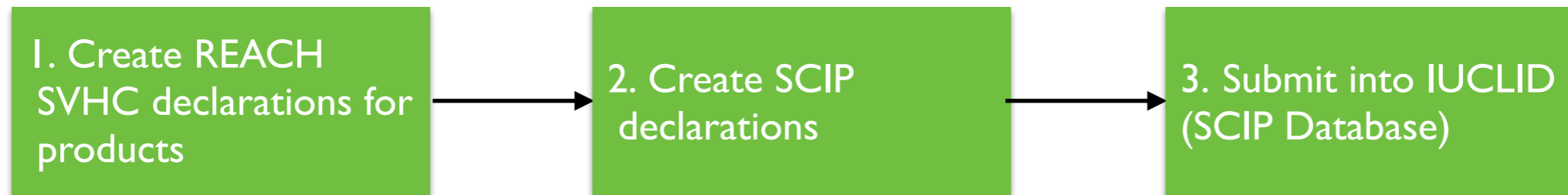
Webinar is 50 minutes with 10
minutes of Q&A
(hopefully)

SCIP Database - EU

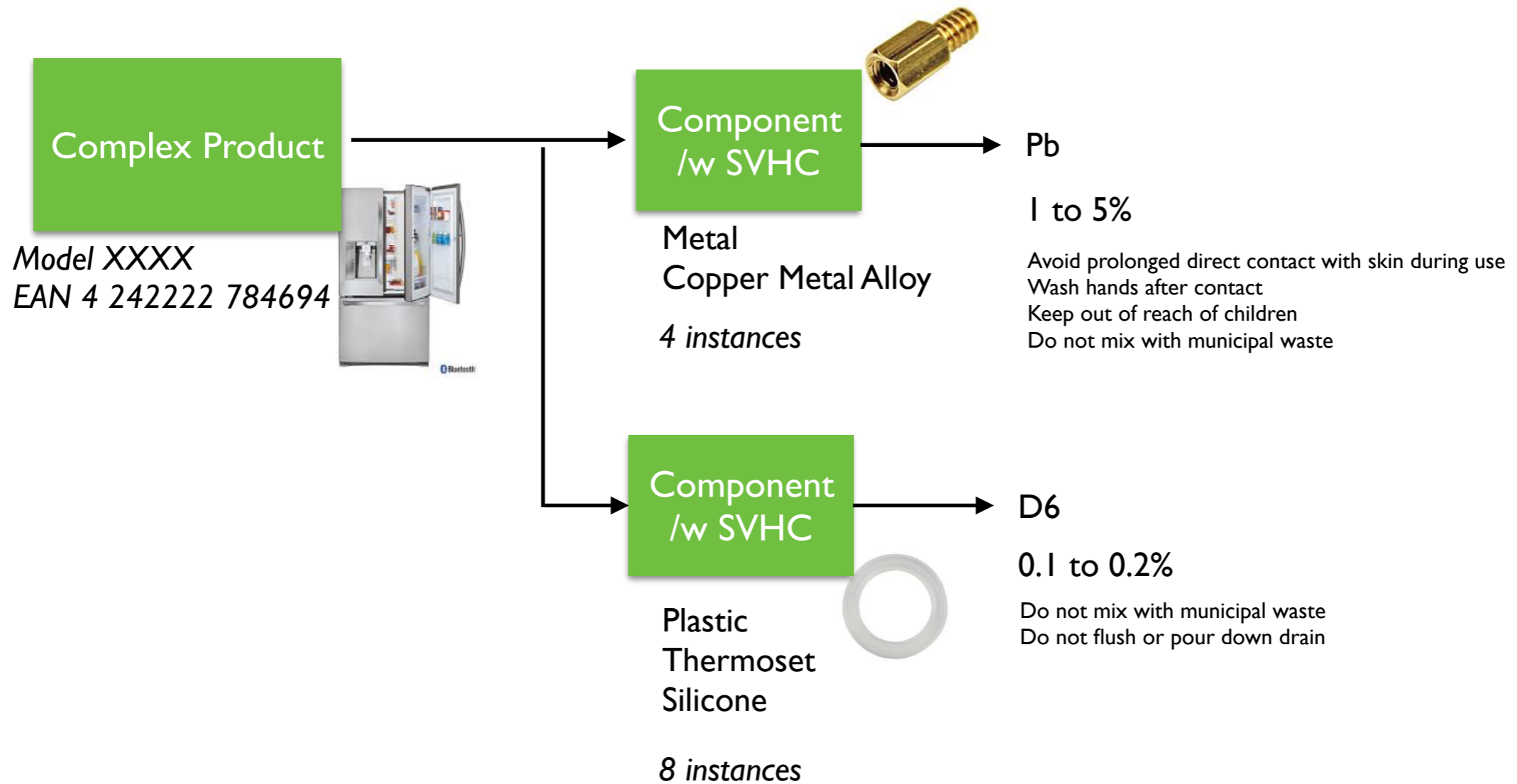
- Combination of
 - Waste Framework Directive Article 9 (Database)
 - REACH Regulation Article 33 (REACH SVHC)
- Deadline
 - Database to open by Jan 2020
 - Manufacturers to register products and their SVHCs in products in IUCLID by Jan 5 2021
- Scope
 - All products

SCIP Database - Compliance

- Due Jan 5 2021
- Steps



Refrigerator Re-visited



Refrigerator Complex Article - Example

Complex Object		
Identifiers	Article Name	ACME 2000 Refrigerator
	EAN/Bar Code	4 242222 784694
	Article Category	8418 21 00 90: Refrigerators; for household use, compression-type, electric or other, Having a refrigerated volume of 382 liters and over
	Production in European Union	No
Safe Use Instructions	Safe use instruction (s)	See component safe use instructions
Number of Units	Number of units	1
Linked article	Linked article 1	[IUCRID Article ID #1]
	# of occurrences of article 1	8
	Linked article 2	[IUCRID Article ID #2]
	# of occurrences of article 2	4



Plastics

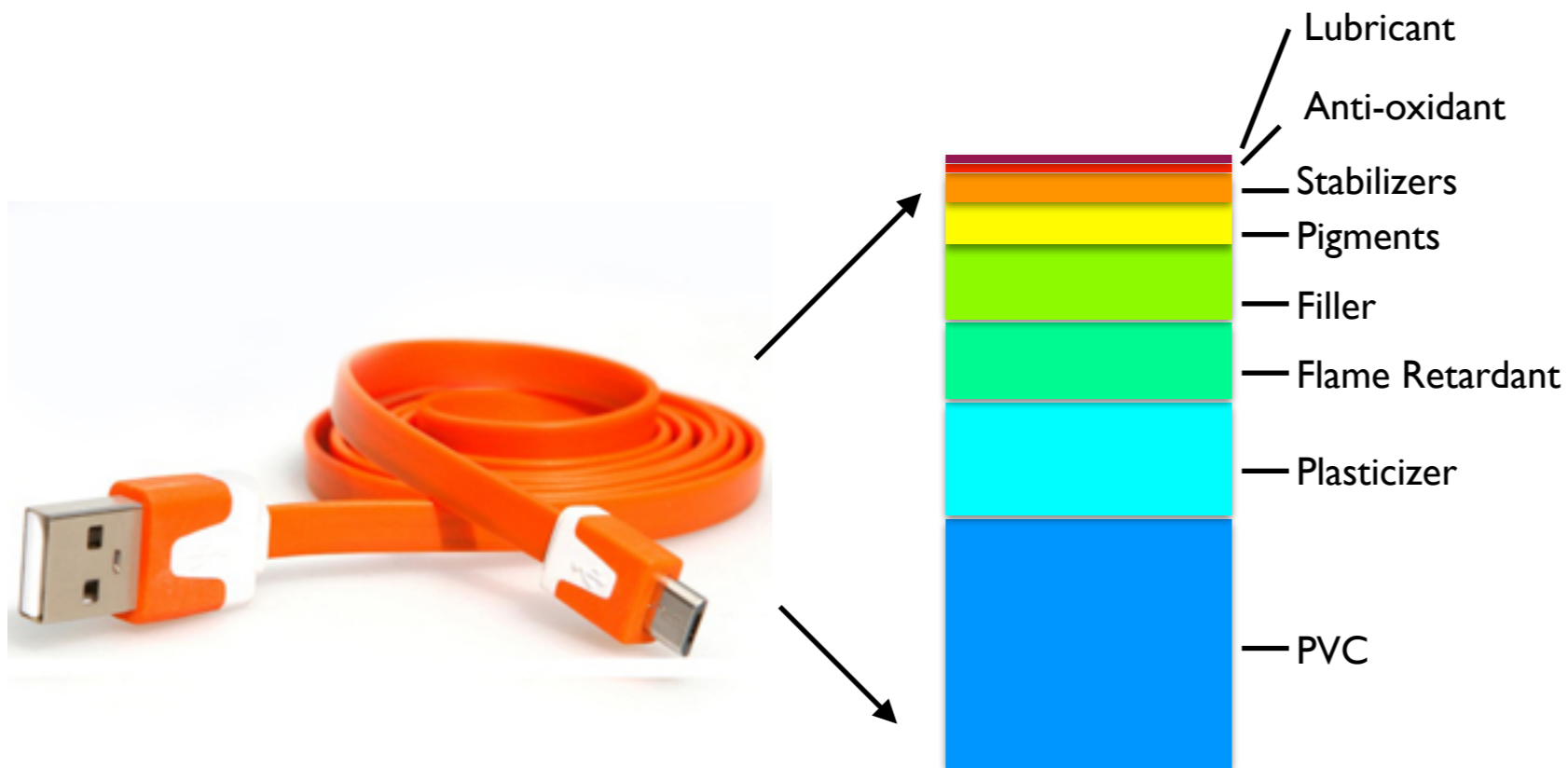
- What is really in plastics?
- and
- Why do we find restricted materials often in plastics?

Example - PVC Cable Jacket

- Example (for representative purposes)

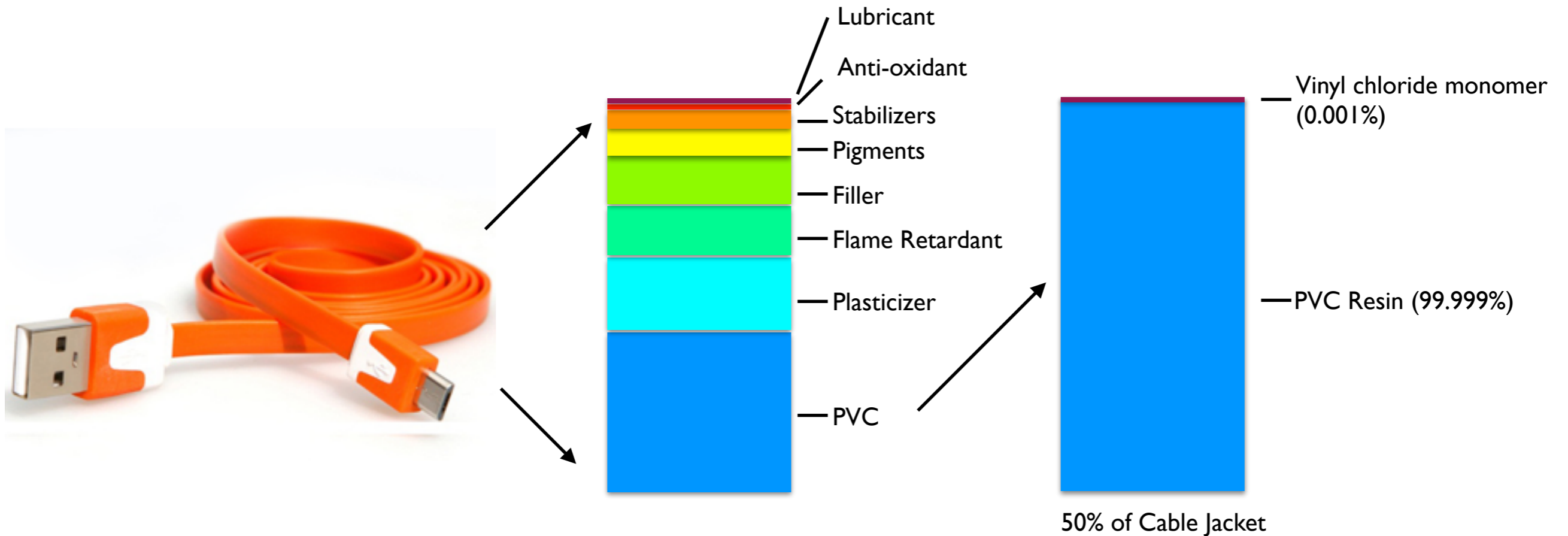


Example - PVC Cable Jacket



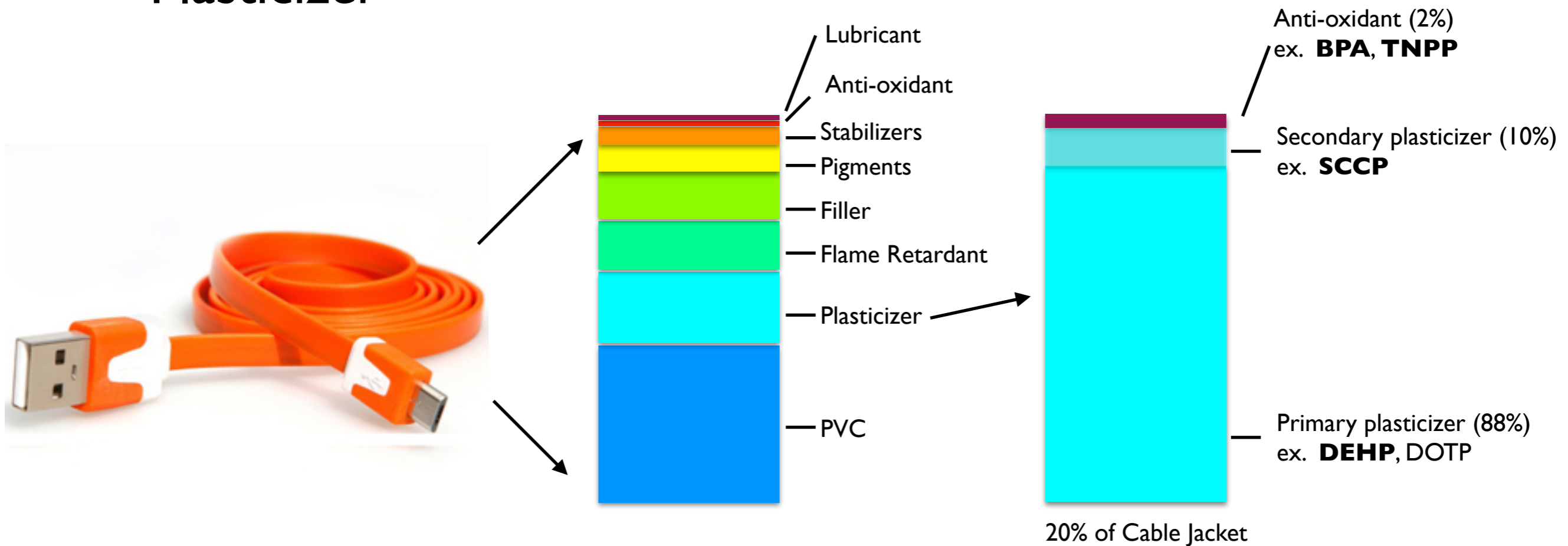
PVC Cable Jacket

- PVC resin



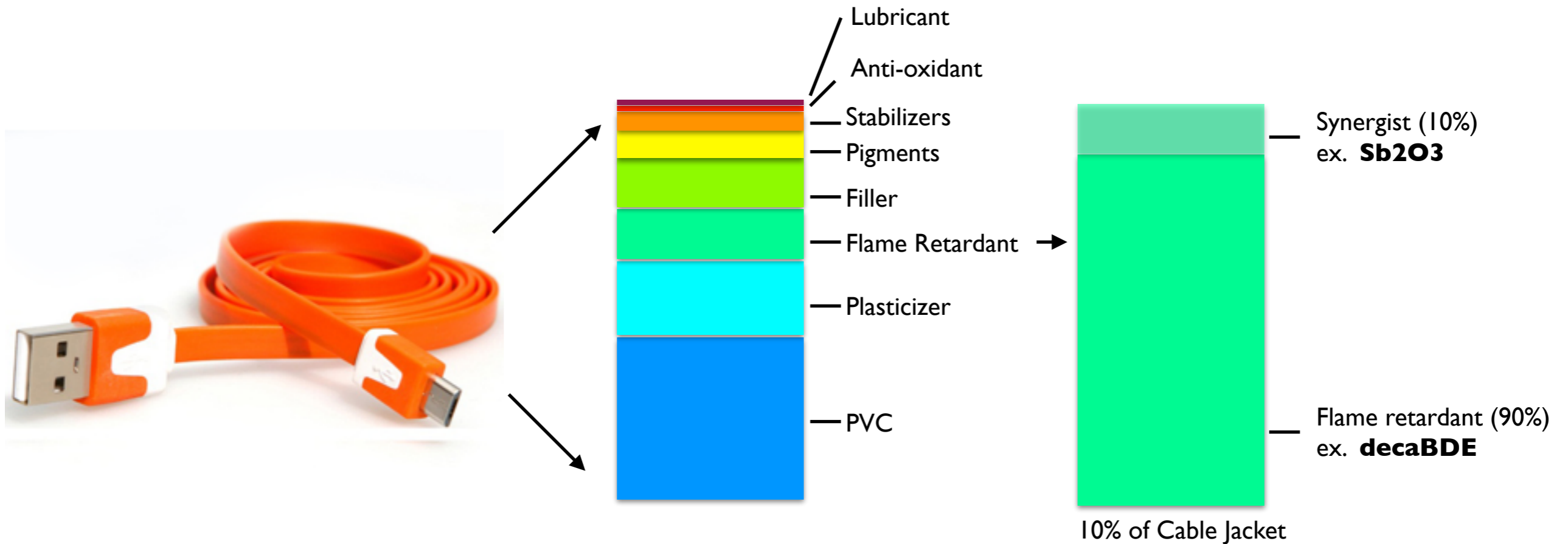
PVC Cable Jacket

- Plasticizer



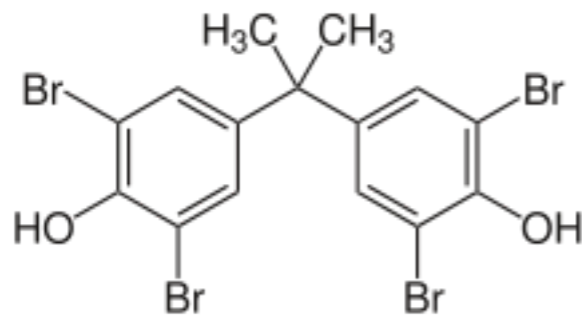
PVC Cable Jacket

- Flame retardant

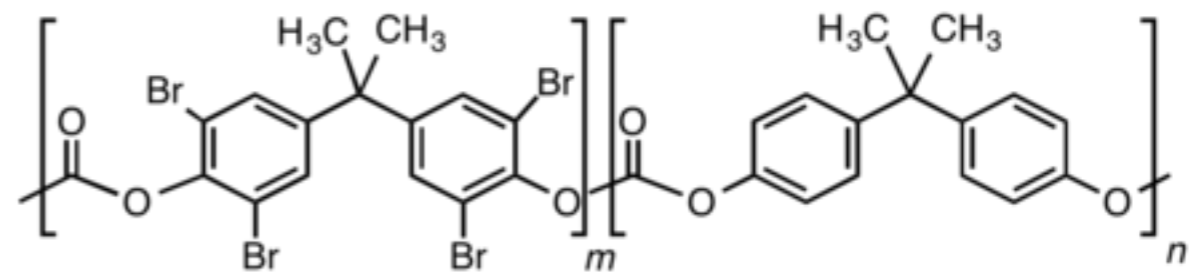


Flame Retardants - Additive vs Reactive

- **Reactive**
 - Reacts and becomes part of the polymer
 - No longer a separate chemical (chemically bonded to plastic)
 - Example - TBBPA in polycarbonate
 - Will not be measurable as original chemical in lab testing



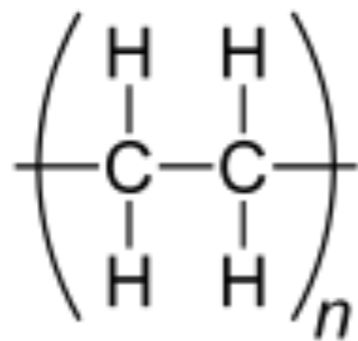
TBBPA



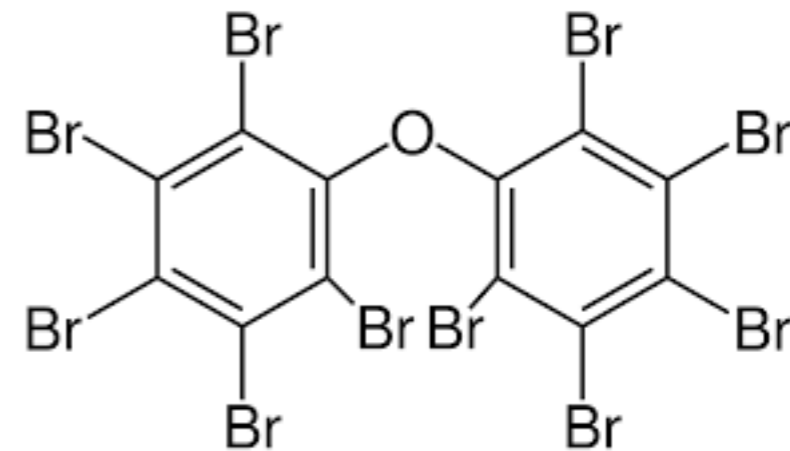
TBBPA fully reacted into polycarbonate

Flame Retardants - Additive vs Reactive

- Additive
 - No chemically bonded to polymer
 - Example - decaBDE in polyolefin
 - Will be measurable as original chemical in lab testing



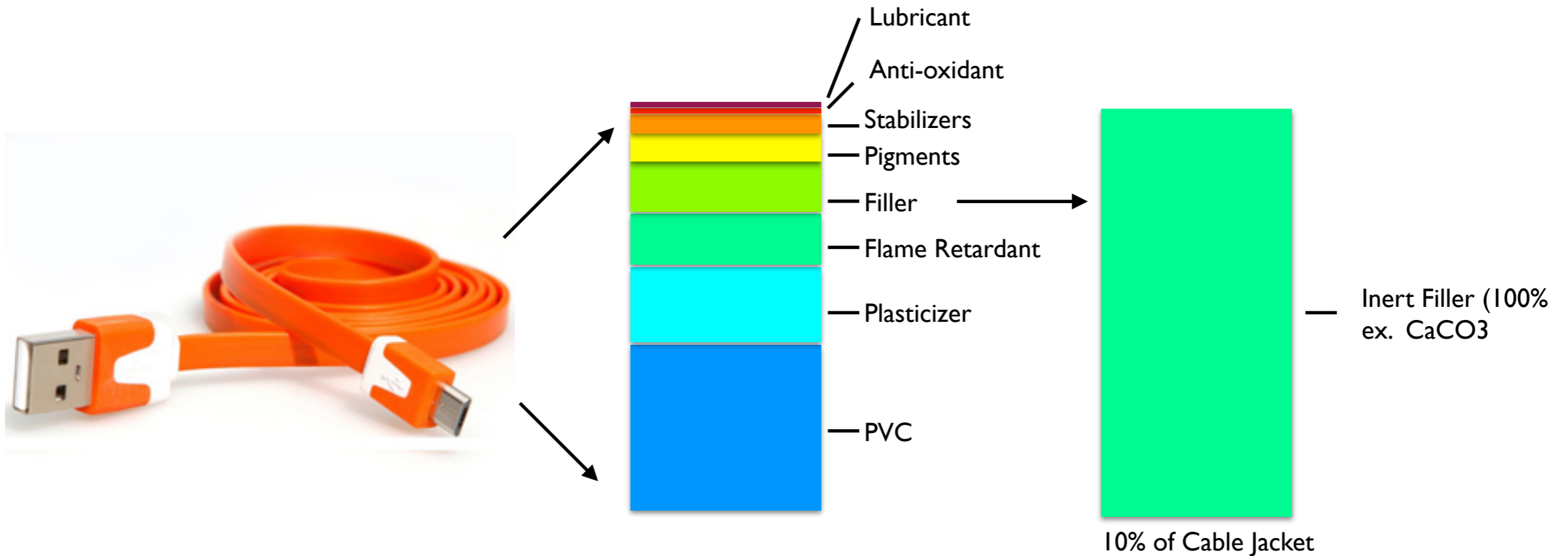
Polyethylene



decaBDE

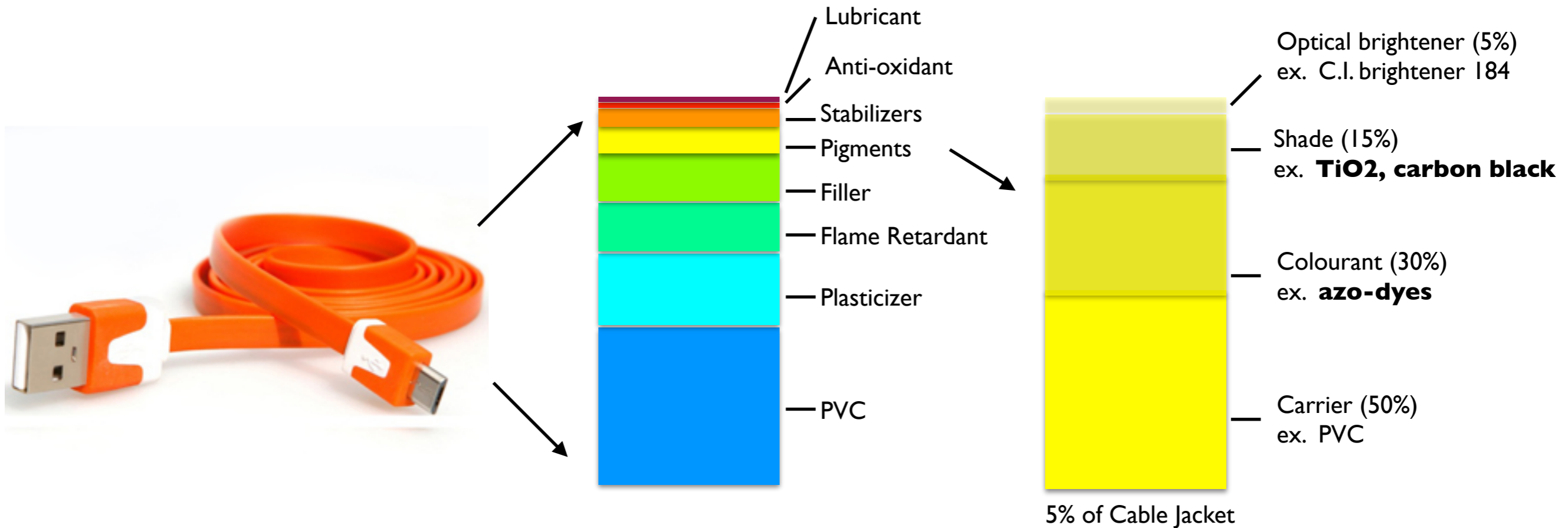
PVC Cable Jacket

- Filler



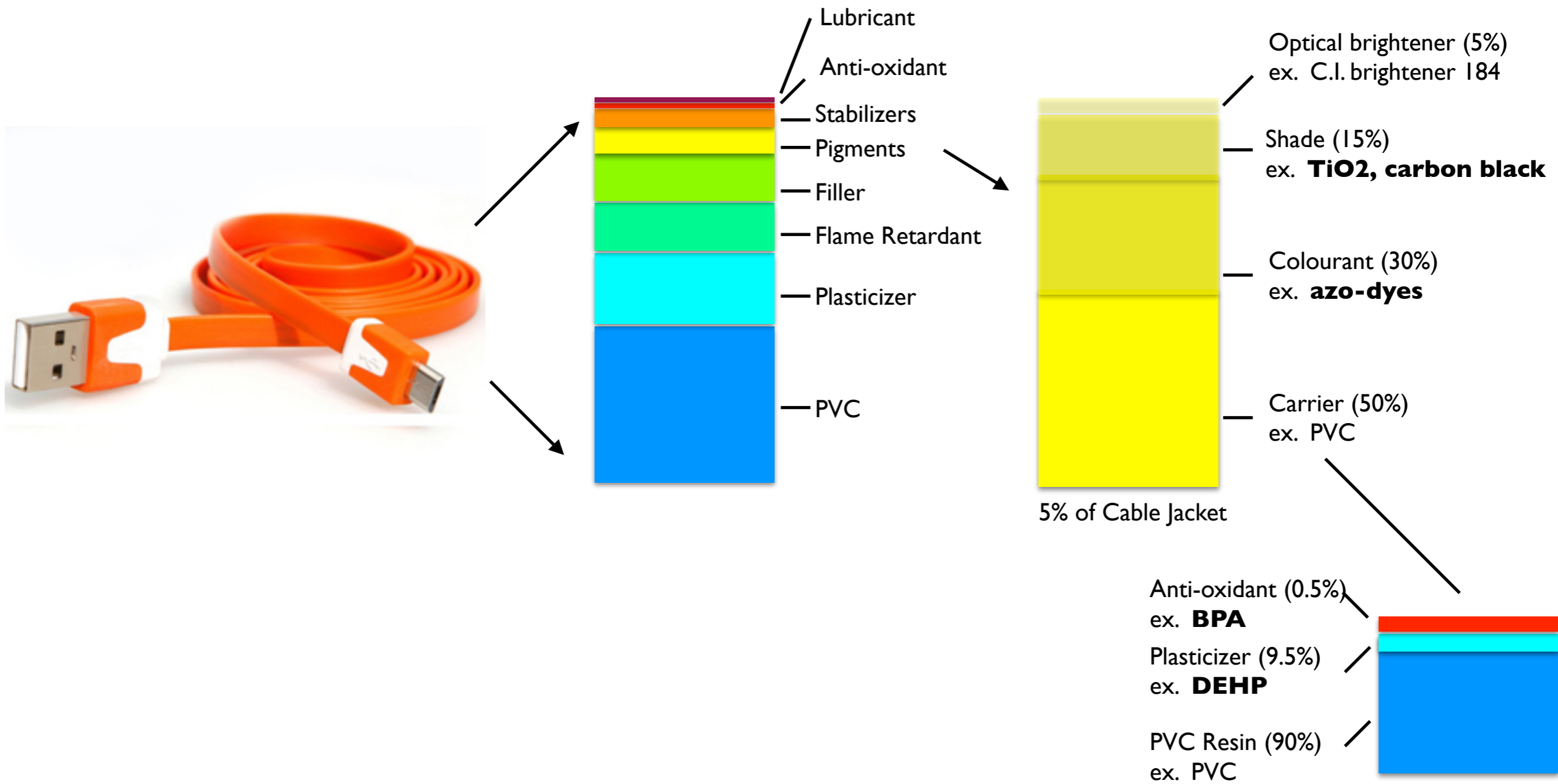
PVC Cable Jacket

- Pigments



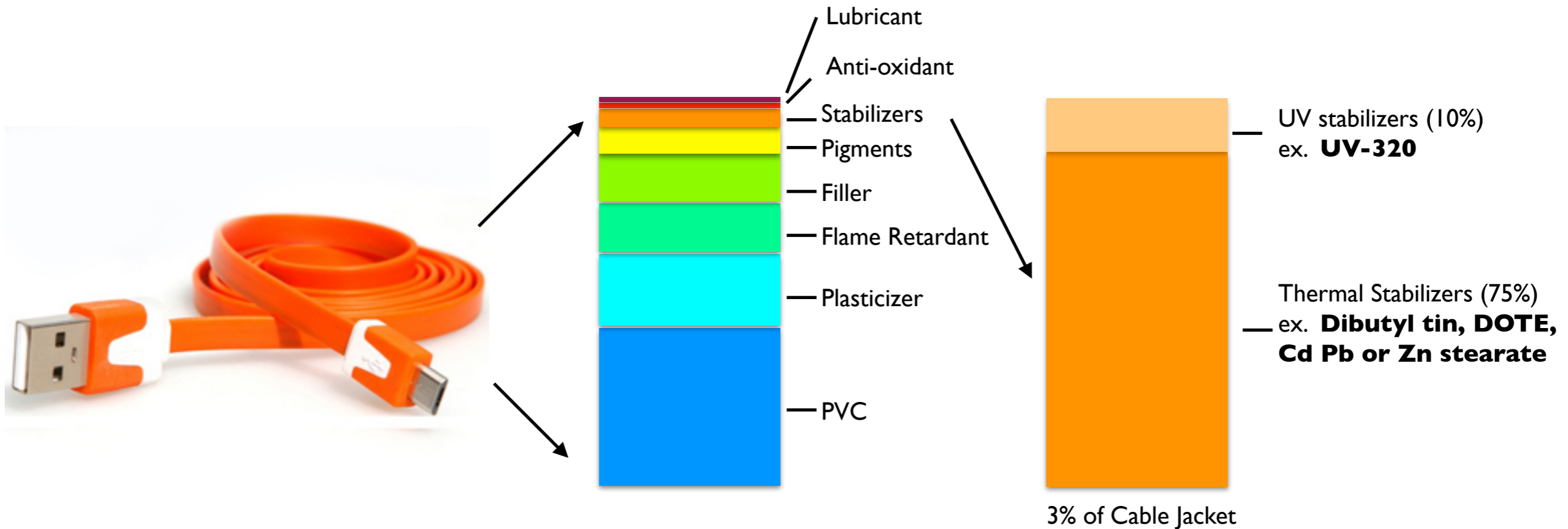
PVC Cable Jacket

- Pigments cont.



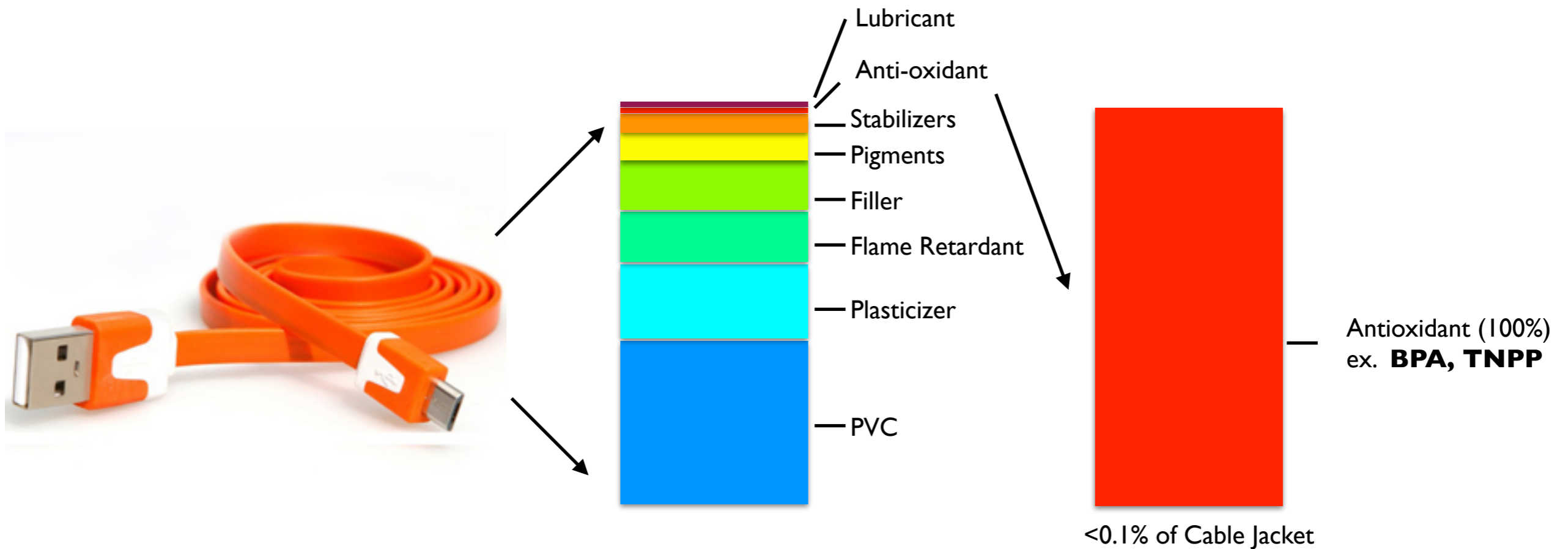
PVC Cable Jacket

- Stabilizers



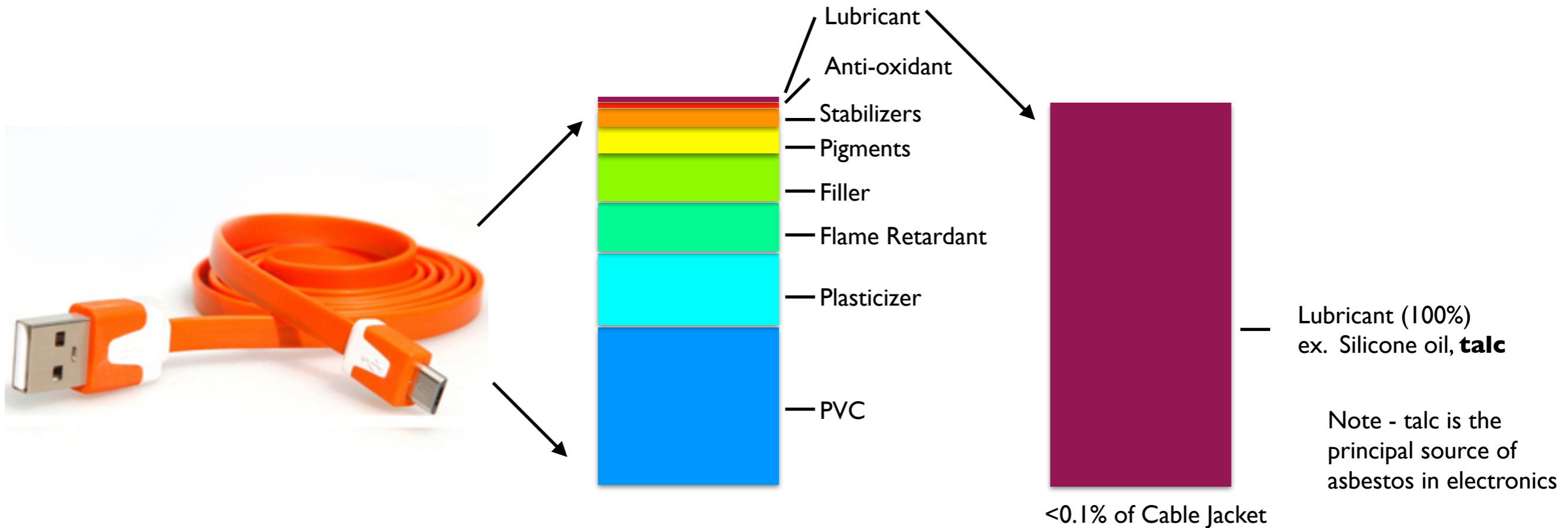
PVC Cable Jacket

- Anti-oxidant



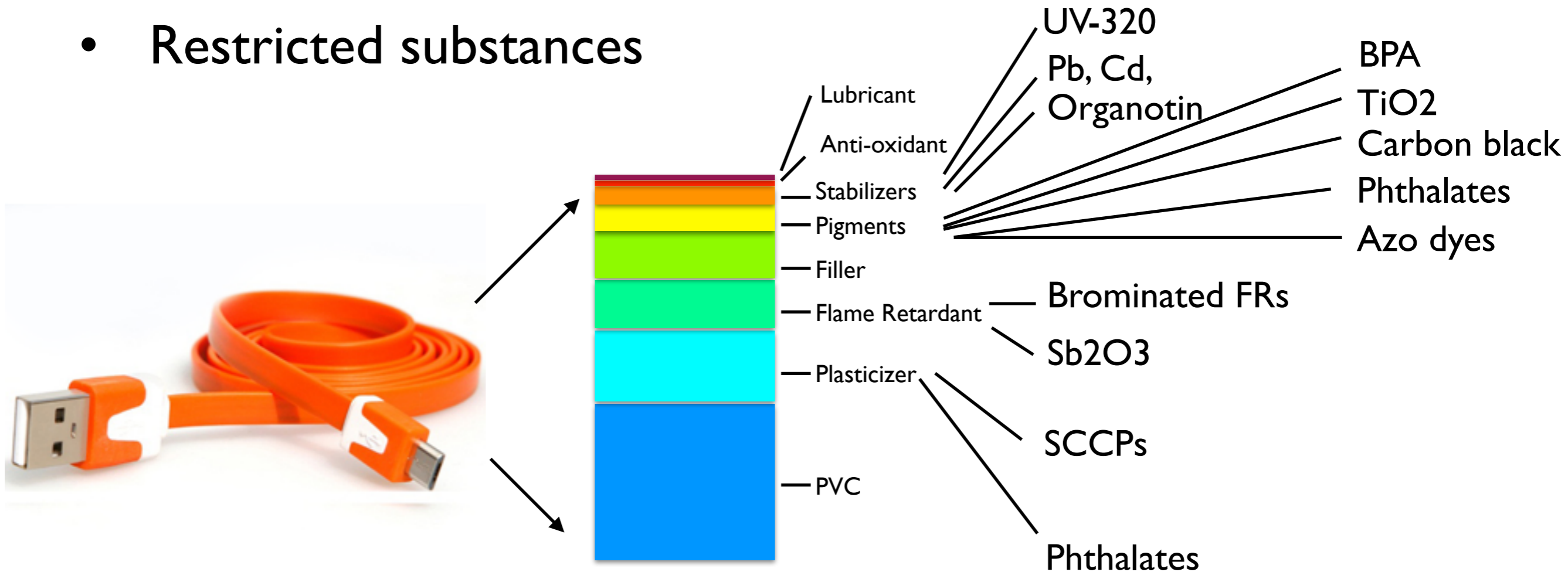
PVC Cable Jacket

- Lubricant



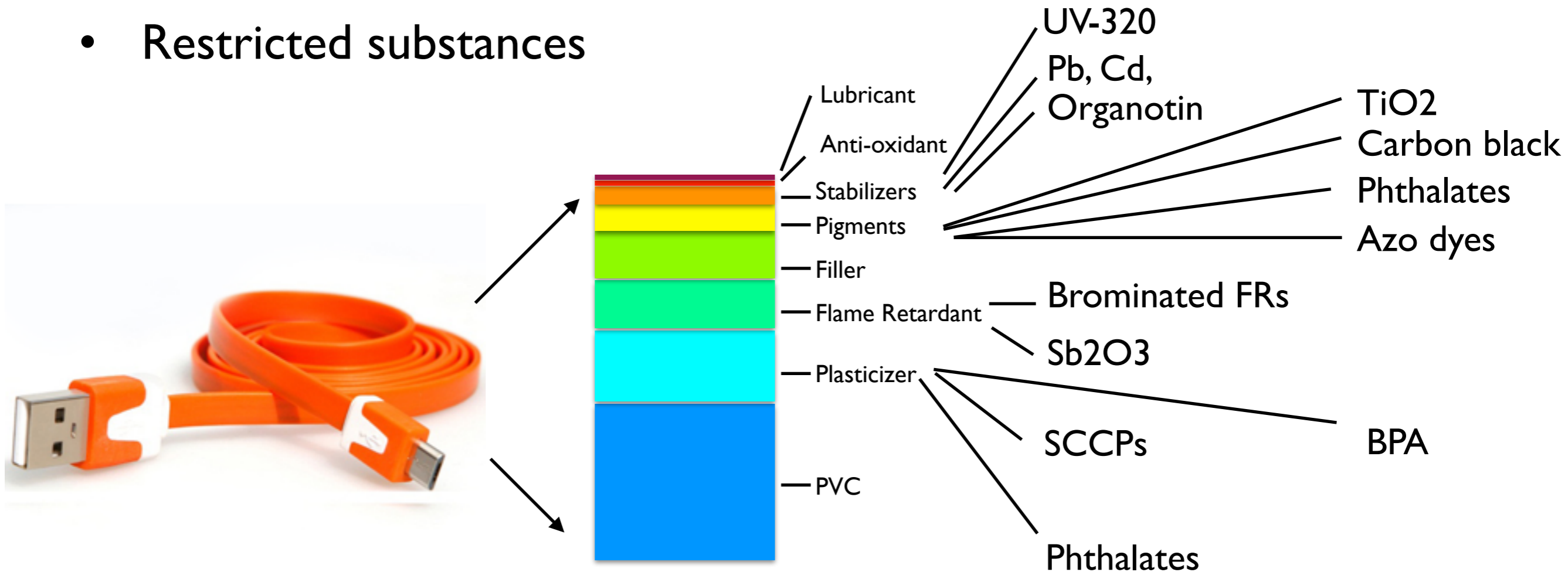
PVC Cable Jacket - Restricted Substances over 0.1% w/w

- Restricted substances



PVC Cable Jacket - Restricted Substances over 0.1% w/w

- Restricted substances



- And, in the past year, we have found most of the above in samples over 0.1% w/w. Phthalates from colourants being very common

SCIP Database - EU

- Combination of
 - Waste Framework Directive Article 9 (Database)
 - REACH Regulation Article 33 (REACH SVHC)
- Deadline
 - Database to open by Jan 2020
 - Manufacturers to register products and their SVHCs in products in IUCLID by Jan 5 2021
- Scope
 - All products

SCIP Database - Compliance - Claigan

- Due Jan 5 2021
- Services
 - Workshops
 - Testing
 - SCIP Declarations and Submission

SCIP Database - Compliance - Claigan

- Due Jan 5 2021
- Claigan Services
 - Workshops
 - Testing
 - SCIP Declarations and Submission

Q&A