

Product Name	C.I.G.Name	Composition	FDA	French PositiveList	AP89(1)	JHOSPA	GB 9685	CONEG & 94/62/EC	RoHS	ELV Directive 2000/53	REACH	SVHC (16/12/2013)	NIRR
Orange	42-107A	Brown 24	(Ti, Sb, Cr)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
	42-118A		(Ti, Sb, Cr)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
	42-170A		(Ti, Sb, Cr)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
	42-158A		(Ti, Sb, Cr)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
	42-118S		(Ti, Sb, Cr)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
Yellow	42-144A		(Ti, Sb, Cr)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
Yellow	42-405A	Yellow 53	(Ti, Sb, Ni)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
	42-401A		(Ti, Sb, Ni)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
	42-406A		(Ti, Sb, Ni)O ₂	✓	✓	✓	✓	✓	✓	✓	Registered	✓	✓
Brown	42-119A	Yellow 119	(Zn, Fe)Fe ₂ O ₄		✓	✓	✓	✓	✓	✓	Pre-registered	✓	✓
	42-122A		(Zn, Fe)Fe ₂ O ₄		✓	✓	✓	N/A	N/A	N/A	Pre-registered	✓	✓
Brown	42-117A	Brown 33	(Zn, Fe)(Fe, Cr) ₂ O ₄			✓	✓		✓	✓	Pre-registered	✓	✓
	42-129A		(Zn, Fe)(Fe, Cr) ₂ O ₄			✓	✓		✓	✓	Pre-registered	✓	✓
Blue	42-219A	Blue 28	CoAl ₂ O ₄	✓	✓	✓	✓	✓	✓	✓	Pre-registered	✓	✓
	42-250A		CoAl ₂ O ₄	✓	✓	✓	✓	✓	✓	✓	Pre-registered	✓	✓
	42-213A		CoAl ₂ O ₄ : TiO ₂ : Li ₂ O	✓	✓	✓	✓	✓	✓	✓	Pre-registered	✓	✓
Blue	42-212A	Blue 36	Co(Al, Cr) ₂ O ₄		✓	✓	✓		✓	✓	Pre-registered	✓	✓
	42-686A		Co(Al, Cr) ₂ O ₄		✓	✓	✓		✓	✓	Pre-registered	✓	✓
Green	42-610A	Green 50	Co ₂ TiO ₄ :NiO:Li ₂ O	✓	✓	N/A	✓	✓	✓	✓	Pre-registered	✓	✓
	42-633A		(Co, Ni, Zn) ₂ TiO ₄	✓	✓	✓	✓	✓	✓	✓	Pre-registered	✓	✓
	42-636A		(Co, Ni, Zn) ₂ TiO ₄	✓	✓	✓	✓	✓	✓	✓	Pre-registered	✓	✓
Black	42-303B	Black 28	Cu(Cr, Mn) ₂ O ₄	✓							Pre-registered	✓	
	42-302A		Cu(Cr, Mn) ₂ O ₄	✓		✓			✓	✓	Pre-registered	✓	
	42-360A		Cu(Cr, Mn) ₂ O ₄	✓		✓			✓	✓	Pre-registered	✓	
	42-313A	Black 26	(Fe,Mn)(Fe,Mn) ₂ O ₄			✓			✓	✓	Pre-registered	✓	✓
Pink	42-209A	Blue 73	Co ₂ SiO ₄			✓	✓	✓	✓	✓	Pre-registered	✓	✓
Magenta	42-820A	—	CoLiPO ₄			✓		✓	✓	✓	Pre-registered	✓	✓

Environmental Friendly Pigments

Orange	42-556A	Brown 48	Fe ₂ TiO ₅ :Al ₂ O ₃	✓		✓	✓	✓	✓	✓	Pre-registered	✓	✓
	42-557A		Fe ₂ TiO ₅ :Al ₂ O ₃	✓		✓		✓	✓	✓	Pre-registered	✓	✓
Yellow	42-540A	Yellow 189	(Ti,Ni,W)O ₂			✓	✓	✓	✓	✓	Pre-registered	✓	✓
Yellow	42-542A	Yellow 161	(Ti,Nb,Ni)O ₂			✓	✓	✓	✓	✓	Pre-registered	✓	✓
Green	42-560A	Green 50	(Co,Mg) ₂ TiO ₄	✓	✓	✓		✓	✓	✓	Pre-registered	✓	✓

Near IR Reflective Pigments

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42-707A	Brown 29	(Cr,Fe) ₂ O ₃			✓				✓	✓	Pre-registered	✓	✓
42-708A		(Cr,Fe) ₂ O ₃			✓				✓	✓	Pre-registered	✓	✓
42-701A	Black 27	(Co,Fe)(Fe,Cr) ₂ O ₄			✓	✓			✓	✓	Pre-registered	✓	✓
42-703A	Green 17	Cr ₂ O ₃ : Fe ₂ O ₃ :CoO	✓	✓	✓				✓	✓	Pre-registered	✓	✓

Laser Marking Pigments

42-903A	—	CuO · xMoO ₃			✓			✓	✓	✓	Pre-registered	✓	
42-920A	—	Bi ₂ O ₃ +Nd ₂ O ₃			✓			✓	✓	✓	Pre-registered	✓	

*N/A No Data Available

1) All TOMATEC CIGP can be used as IR pigments except Black 28 and Laser Marking Pigments.

TSR (Total Solar Reflectance)

Products	TSR Value	CIGN	Represent Value
42-701A	14%	Brown 24	66%
42-703A	24%	Brown 48	55%
42-707A	24%	Yellow 119	45%
42-708A	28%	Brown 33	34%
		Yellow 53	77%
		Green 50	33%
		Blue 28	49%
		Black 27	14%

Acrylic resin coating, Pigment Content 10 PHR, Coating thickness (Wet) 200 µm, JASCO V-570, TSR: JIS R 3106-1998

3) GB 9685-2008

CIGN	Limitations
Brown 24	PEI, PPE: 1%; PBT, TPC-ET, POM: 2%
Yellow 53	PEI, PPE, PBT: 1%
Yellow 119	PPE 2%
Blue 36	PEI, PPE, PBT 0.5%
Green 50	Appropriate use according to production requirements

2) FDA (USA)

21CFR 178.3297 (Colorants for polymers)

Approved for use as a colorant in all polymers intended to contact food,

CIGN	Limitations
Blue 28	not to exceed 5% by weight ^{*1}
Brown 24	not to exceed 1% by weight
Green 17	not to exceed 5% by weight ^{*2}
Yellow 53	not to exceed 1% by weight
Black 28	not to exceed 5% by weight

*1: Approved for use as a colorant without weight limitations in polymeric and resinous coatings under 21CFR 175.300;

also approved without weight limitations under 21CFR §175.380, 1771460 and 177.1900

*2: except as specified follow; In olefin polymers complying with Sec. 177.1520. In repeat-use rubber articles complying with Sec. 177.2600.

21CFR 170.39 (Threshold of Regulation for substances used in food-contact articles)

Approved for use as a colorant in all polymers intended to contact food,

CIGN	Limitations
Brown 24	not to exceed 2% by weight
Yellow 53	not to exceed 2% by weight
Green 50	not to exceed 2% by weight

4) SVHC

A ✓ indicates that each of TOMATEC CIGP does not contain the substances listed on the list of SVHC(151 substances, Apr.1. 2014)