GS1 Product Image Specification Standard

establishes rules for the storage of digital images associated to products and provides details on all aspects of digital imaging storage

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Log of Changes

Release	Date of Change	Changed By	Summary of Change
2006 06 29	2006 29 June	D. Buckley	Converted 'VICS Product Image Specification' into GS1-GSMP template format
2006 07 11	2006 11 July	R. Laur	Updated information for CR submission to GSMP
1	2006 08 December	GDSN/GSMP Imaging Specification Work Group	See analysis documentation.
2	2007 11 January	GDSN/GSMP Imaging Specification Work Group	See comment resolution document from GSMP Public Review
2.1	2007 07 February	GDSN/GSMP Imaging Specification Work Group	Errata to fix examples.
2.2	2007 13 February	GDSN BRG	Clarification of examples 4-2, 4-3, 4-4
2.3	2008 26 February	D.Clark	Clarification to planogram naming structure 2.1.5
2.4	2013 08 30	GDSN/GSMP Imaging Specification Work Group	WR # 12-046; 12-244; 12-253; 12-254; 12-255; 12-256; 12-257; 12-258; 12-259; 12-310; 12-312; 12-313; 12-322; 13-018; 13-040; 13-105
2.5	2014 03 11	Errata	Corrections to wording and examples added
2.6	2014 10 01	GDSN/GSMP Imaging Specification Work Group	WR #14-076; 14-023; 14-038; 14-055; 14-099
2.7	2015 03 02	GDSN/GSMP Imaging Specification Work Group	WR # 15-004 rendered images
2.8	Sept 2015	D.Buckley & D.Clark	Applied new GS1 branding prior to publication and WR # 14-071 (Metadata added); 14-184 (style sheet to identify facing level below each); 14-200 & 14-201 (GDTI Based Naming added); 15-154 (descriptions added to the image capture types for still shot single & multiple GTIN)
3.0	Jun 2017	D.Buckley & D.Clark	Document re-design based on WR 16-219
3.1	Nov 2017	D.Clark	WR 17-083: Add new Section 2.5.5 Sample (Prototype) Image type I and WR17-196 Update for Product Label Images
3.2	Jul 2018	D.Clark	WR 18-054 updates to Section 3.2 and 18-088: updates to Section 2.2 & 2.8 for images saved with transparent backgrounds.
3.3	Feb 2019	D.Buckley & D.Clark	WR 18-228 Updates based upon Consumer Product Variant (CPV) WR 18-321 Updates based upon GS1 Mobile Ready Hero Images Guideline

Release	Date of Change	Changed By	Summary of Change
3.4	Feb 2020	D.Buckley & D.Clark	WR 18-088, errata fix updated section 2.9 (Clipping paths) WR 19-140, updates for 360-degree image WR 19-152, update to section 2.6 to allow JPG for label images WR 19-153, new section 2.5.6.7 on Certification Seals/Claims WR 19-166, Update to section 3.2 on naming convention for size comparison WR 19-180 new section 2.5.6.8 Preparation Instructions WR 19-219, new section on Petfood Feeding Instructions/Ingredients WR 19-225, new section on Secondary images WR 19-227, update to section A4. For meta data WR 19-232, new section on Margins WR 19-285, update to GTIN naming for Pallet/Display Errata: updated list of contributors, section 5 added missing description.
3.4.1	Mar 2020	D.Buckley & D.Clark	WR 20-046, errata fix Ambience/Mood in section 3.2
3.5	May 2020	D.Buckley, R.Burd & D.Clark	WR 19-308 align pack shot and for Mobile Ready Hero Images WR 20-050 Reposition information about Photography WR 20-080 Section 3.2 Open Case "M" fixes Errata fix Section 3.2 (Full flat E → L)
3.6	Jul 2020	D.Buckley & D.Clark	WR 20-164: Full Flat Packaging Label Images-Unstitched WR 20-165: Full Flat Packaging Label Images - Stitched WR 20-166: Safe Handling Instructions WR 20-167 Hero Optimised Images WR 20-168: Sidekick Images WR 20-169: 3D Rendered file types
3.7	Dec 2020	D.Buckley & D.Clark	WR 20-310: Secondary images WR-20-314: Special cases WR-20-315: Montage (Composite) WR-20-316: Detail (Technology)
4.0	Mar 2021	D.Clark	WR 20-410: Product Image name to include fileType WR 21-079 update layout for HTML and refresh WR 21-166 clipping path and background optional
4.0.1	Aug 2021	D.Buckley	WR21-266 Errata fix in Annex A (Social Media listed as "R". It is "K'
4.1	Jan 2022	E.Braz & D.Buckley	WR 21-306 Add "Alt Text" in section 7.2 (metadata list) Errata fix section 5.3 (serialisation)

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Table of Contents

1 Introduction

This GS1 standard establishes rules for the storage of digital images associated to products. The product identification number used is the Global Trade Item Number (GTIN) and this document provides details on all aspects of digital imaging storage. This document does not specify how the images should be delivered via electronic commerce.

These standards focus on the highest quality and size of image which should be stored to enable any output format that may be requested internally or externally for various applications. There is no 'one size fits all' for images, but by having access to a larger more content rich base file, other formats may be derived.

It is important to note that digital assets (e.g. images) are only one part of what is needed. Data, both meta and associated, are essential for the timely and accurate usage of the assets. Additional information on minimum data requirements are outlined in the TIIG (Trade Item Integration Guideline).

Note:

- Image delivery is out of scope.

- For more information on pharmaceuticals/over-the-counter pharmaceuticals, nutritional supplements and medical products refer to the GS1 Pharmaceutical Image Implementation Guideline:

    - Legal aspects must be considered. Refer to local Government bodies and MOs for additional details., &

1.1 Images in this document

Many of the images in this document have been provided courtesy of GS1 Canada, SGK & Syndigo. They show fictitious products and have been created specifically to illustrate this standard.

1.2 Determining the front face

All product images are important, so too the exchange of information between trading partners. To ensure what is identified meets what is expected, an agreed upon identification structure is required. The first step is the determination of the front face of an item.

1.2.1 Default front face

The front facing of the products is determined by the GS1 Package and Product Measurement Standard on determining the default front. All other facings are taken in relation to the front face and are identified with a numerical extension identifying that face. Merchandisable facings are automatically captured as the numerical extension allows multiple images (and facings) for the same GTIN.

1.3 Differentiating Photographic Images from Rendered Images

The differentiation of images as to their being photographic or rendered in nature is somewhat subjective and while it can be reasonably argued that a photographic image once digitally stored and retouched ceases to be photographic; striking a balance between the two becomes necessary when identical product images exist in a single system as both photographic and rendered particularly when the associative nomenclature within the existing guidance calls for both files to be identically named. When this occurs there must be a definitive process in order to determine the difference between the two when both are expected to exist simultaneously in the same environment.

1.3.1 Photographic images

Photographic image: the result of the electronic or chemical capture of a likeness of a physical object with the use of a camera.

Photographic images may become digitised, stored in a digital format or can be immediately stored in a digital format directly from within the camera itself. Where photographic images were retouched physically even colourised, these process can take place with a photographic image within specialised software. While these images may reside and may have been altered in a digital environment they were at one time a physical capture of object and light as captured by a camera with a photographer and should be considered 'photographic images'.

1.3.2 Rendered images

Rendered image: the result of the creation of a digital likeness of a physical object with the use of a computer and software.

Rendered images often do not begin with a photographic device. While rendered images do have the traits necessary to be physically transferred to paper or film, they often reside forever within a digital environment, viewed only by way of a projection device such as a monitor, phone or projector. Where photographic images were once retouched physically, similar processes for rendered images take place almost entirely within specialised software. While a rendered image may contain (data) once contained by a 'photograph' once the image is digitised, edited, scaled, coloured, lit and posed within a digital composition, it becomes a rendered image, which is not to say that a photograph retouched with specialised software does not remain photographic, that distinction is left to the brand owner. CGI (Computer Generated Imagery) programs allow for files to be rendered/saved with transparent backgrounds, making applying a clipping path redundant. It is important to note that although clipping paths are not required for images with a transparent background, delivery format may require one to be applied.

1.3.3   Differentiation of images

While arguments can certainly be made as to the nature of images, be they photographic or rendered; given the preceding paragraphs and considering that even rendered images may contain information (data) once contained by a 'photograph'; discernment or differentiation between photographic and rendered images is at the discretion of the brand owner, in other words, identifying an image as being photographic or rendered when one or the other exists is optional. Differentiation between photographic and rendered images becomes recommended, though not required, when they both exist in the same file system when the file system is the brand owners or shared between Trading Partners.

1.3.4   Image Differentiation Decision Tree

```
1. Was Image          ┌─────┐   Y    ┌──────────────┐
   created with a devise │  1  ├──────▶│   Rendered   │
   other than a camera  └──┬──┘        │    Image     │
                           │ N         └──────────────┘
                           ▼
2. Was the image      ┌─────┐   Y    ┌──────────────┐
   significantly altered │  2  ├──────▶│   Rendered   │
   (not 'retouched')    └──┬──┘        │    Image     │
   using specialised      │ N         └──────────────┘
   software               ▼
3. Was the           ┌─────┐   Y    ┌──────────────┐
   composition of the │  3  ├──────▶│   Rendered   │
   image digitally     └──┬──┘        │    Image     │
   created or enhanced   │ N         └──────────────┘
                         ▼
                  ┌──────────────┐
                  │ Photographic │
                  │    Image     │
                  └──────────────┘
```
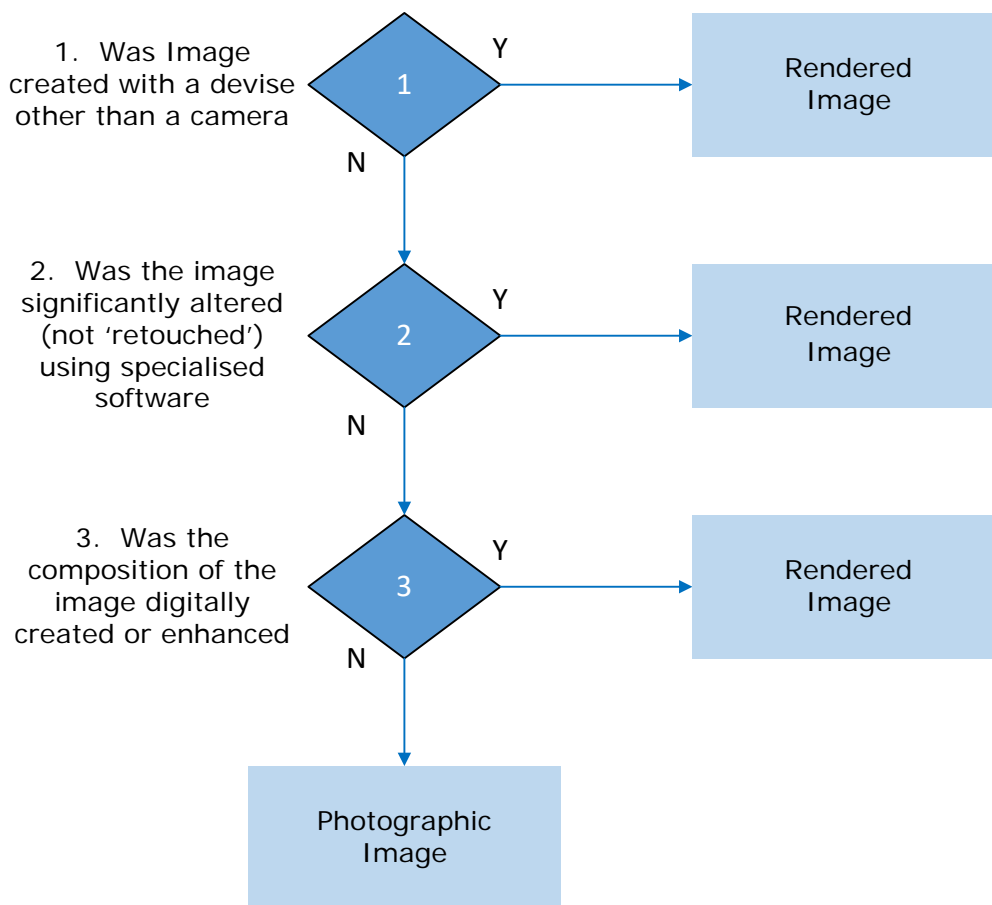
2   Technical recommendations

2.1   Photography recommendations

Professional equipment optimises results:

- The preferred equipment is a DSLR camera equipped with full frame CCD sensor (avoid Point and shoot and smart phone cameras).

- Product packaging should be framed using 80% of the sensor.

- The image should be captured with appropriate lens to avoid wide angle distortion.

- The lens aperture should be set to deliver a large depth of field so that the whole product is sharp.

- Controlled white balance, no colour casts.

- The lighting of product should be uniform when the image is taken.

- Contrast and exposure should be balanced over-all; avoid high contrast effects.

- Reflections should be realistic without looking "blown-out" in highlights hiding product information.

- Image should not be over sharpened in the (digital) image processing.

2.2   Product views

Decisions as to whether products should be photographed in the package, out of package, or both, should be made based on the presentation of the product in a live sale scenario (i.e., box of cereal on a shelf vs. a lawnmower on display). If there are doubts as to which state is most appropriate to best represent the product, both should be taken and appropriately identified. This decision should be taken with the data provider.

15°Elevation (3D images)

- All products should have 3 separate views when warranted per marketable face – language

- Centre front view taken at **15° top elevation** is preferred

- Left and right **15° rotation** views when warranted **0°Elevation (2D images) and other exception**

- Some products my require a **steeper or shallower** angle to display effectively. For images of products with negligible depth properties, a 0-degree plunge angle is best. (i.e., blister packs)
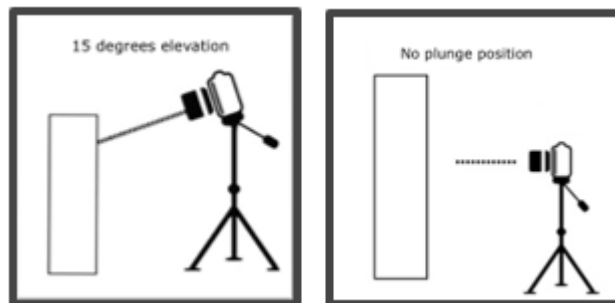
2.3   Editing recommendations

- No colour casts. Colour should be as rich, vibrant and eye-catching as possible.

- Contrast should be balanced over-all and not "blown-out" in highlights.

- Reflections & shadows areas on the product should put emphases to details/shape without hiding text or logos.

- Retouching should be as seamless and undetectable as possible and be convincing ata minimum of 100% magnification (i.e., removal of expiration/best before dates.

- Path 1 should be close centred on the edge of the subject.

- Subject should be centred in Margins to cover 95% on the canvas.

- Graphic rendering of a packaging should be realistic.

- No layers, guides or rulers should be left on the images.

- Background layer should be white (RGB 255,255,255).

- No signatures, "finger printing" or visible watermarks. No compression artifacts. No interpolation ("resizing up").

- No transfer functions or postscript colour management.

3 Primary Images

Primary Images are images which can, on their own, represent the product in an e-commerce application, these include Product Image (web & High resolution) with or without supporting elements.

3.1 Product Image (web) primary image

There will be instances where photography, other than "product" photography will be needed. Situations may arise where product shots are needed at a size or resolution that exceeds the identified standards. In these cases, it will be up to the customer to either originate the photography themselves or work out arrangements with the vendor to supply said photography on an "as needed" basis. ALL supplied photography should conform to the guidelines listed below.

✅ **Note**: Marketing Images applies to both digital images captured through use of a digital camera or other digital imaging devices as well as rendered images.

✅ **Note**: Rendered images are computer generated images which can be comprised of graphic renderings and/or digital images to create a lifelike product semblance.

Product Image (Single GTIN): which is an image of a product on a white background, with no other elements in the frame.

3.1.1 File format

Storage: LZW Compressed TIFF

3.1.2 File size

900x900 – 2400x2400 pixels

3.1.3 Views

0 - Not applicable

1 - Front

2 - Left

3 - Top

7 - Back

8 - Right

9 - Bottom

3.1.4 Backgrounds and clipping path

Clipping path is required within one pixel device; background should be removed to white (RGB 255/255/255)

3.1.5 File Naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-19 are mandatory for the Product Image type

Mandatory

Position	1-14	15	16	17	18	19
Data	GTIN	underscore	Image Type	Facing	Orientation	State
value	(n14)	_	A - Primary Image Web	0 - Not applicable	C - Centre	(1) In packaging
				1 - Front	L - Left	(0) Out of packaging
				2 - Left	R - Right	(A) Case
				3 - Top	N - No plunge angle	(B) Innerpack
				7 - Back		(C) Raw/uncooked considered edible.
				8 - Right		(D) Prepared
				9 - Bottom		(M) Open Case
						(P) Pallet/Display

Optional

Position	20	21+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_		(MMYY)	s(n2)	R	CPV(an...20)

Position 20+ are optional components, each must be preceded by an underscore '_'

Examples of product naming:

<GTIN>_A1L1_0621_s01.jpg

<GTIN>_A1R1_0621_s01.jpg

3.2   Product Image with Supporting Elements (web)

There will be instances where photography, other than "product" photography will be needed. Situations may arise where product shots are needed at a size or resolution that exceeds the identified standards. In these cases, it will be up to the customer to either originate the photography themselves or work out arrangements with the vendor to supply said photography on an "as needed" basis. ALL supplied photography should conform to the guidelines listed below.

✅ **Note**: Marketing Images applies to both digital images captured through use of a digital camera or other digital imaging devices as well as rendered images.

✅ **Note**: Rendered images are computer generated images which can be comprised of graphic renderings and/or digital images to create a lifelike product semblance.

Product Image with Supporting Elements in Image: which is an image of a product on a white background, with additional elements that are not including when selling the product. The additional elements are to strengthen the product, not to create a 'Beauty shot' also referred to as a staged shot. It should incorporate additional items which enhance the product, (e.g. a glass of wine and stem of grapes with a bottle of wine (GTIN); fresh vegetables surrounding a bottled sauce (GTIN); a cooked and plated version of the product being sold in the same frame as the item, etc.)

3.2.1   File format

Storage: LZW Compressed TIFF

3.2.2   File size

900x900 – 2400x2400 pixels

3.2.3   Views

0 - Not applicable

1 - Front

2 - Left

3 - Top

7 - Back

8 - Right

9 - Bottom

3.2.4   Backgrounds and clipping path

Clipping path is required within one pixel device; background should be removed to white (RGB 255/255/255)

3.2.5   File Naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-19 are mandatory for the Product Image type

Mandatory

Position	1-14	15	16	17	18	19
Data	GTIN	underscore	Image Type	Facing	Orientation	State
value	(n14)	_	B - Primary Image Web w/ supporting elements.	0 - Not applicable	C - Centre	(1) In packaging
				1 - Front	L - Left	(0) Out of packaging
				2 - Left	R - Right	(A) Case
				3 - Top	N - No plunge angle	(B) Innerpack
				7 - Back		(C) Raw/uncooked considered edible.
				8 - Right		(D) Prepared
						(E) Plated
						(F) Styled
						(G) Staged
						(H) Held
						(J) Worn
						(K) Used
						(L) Family
				9 - Bottom		(M) Open Case
						(P) Pallet/Display

Optional

Position	20	21+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an...20)

Position 20+ are optional components, each must be preceded by an underscore '_'

Examples of product naming:

09521234567806_B1C1_0622_s01.jpg

3.3   Product Image (High Resolution)

There will be instances where photography, other than "product" photography will be needed. Situations may arise where product shots are needed at a size or resolution that exceeds the identified standards. In these cases, it will be up to the customer to either originate the photography themselves or work out arrangements with the vendor to supply said photography on an "as needed" basis. ALL supplied photography should conform to the guidelines listed below.

Note: Marketing Images applies to both digital images captured through use of a digital camera or other digital imaging devices as well as rendered images.

Note: Rendered images are computer generated images which can be comprised of graphic renderings and/or digital images to create a lifelike product semblance.

Product Image (Single GTIN): which is an image of a product on a white background, with no other elements in the frame.

3.3.1   File format

Storage: LZW Compressed TIFF

3.3.2   File size

2401x2401 – 4800x4800 pixels

3.3.3   Views

0 - Not applicable

1 - Front

2 - Left

3 - Top

7 - Back

8 - Right

9 - Bottom

3.3.4   Backgrounds and clipping path

Clipping path is required within one pixel device; background should be removed to white (RGB 255/255/255)

3.3.5   File Naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-19 are mandatory for the Product Image type

Mandatory

Position	1-14	15	16	17	18	19
Data	GTIN	underscore	Image Type	Facing	Orientation	State
value	(n14)	_	C - Primary Image High Resolution	0 - Not applicable	C - Centre	(1) In packaging
				1 - Front	L - Left	(0) Out of packaging
				2 - Left	R - Right	(A) Case
				3 - Top	N - No plunge angle	(B) Innerpack
				7 - Back		(C) Raw/uncooked considered edible.
				8 - Right		(D) Prepared
				9 - Bottom		(M) Open Case
						(P) Pallet/Display

Optional

Position	20	21+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_		(MMYY)	s(n2)	R	CPV(an...20)

Position 20+ are optional components, each must be preceded by an underscore '_'

Examples of product naming:

09521234567813_C1C1_0622_s01.jpg

3.4 Product Image with Supporting Elements (High Resolution)

There will be instances where photography, other than "product" photography will be needed. Situations may arise where product shots are needed at a size or resolution that exceeds the identified standards. In these cases, it will be up to the customer to either originate the photography themselves or work out arrangements with the vendor to supply said photography on an "as needed" basis. ALL supplied photography should conform to the guidelines listed below.

Note: Marketing Images applies to both digital images captured through use of a digital camera or other digital imaging devices as well as rendered images.

Note: Rendered images are computer generated images which can be comprised of graphic renderings and/or digital images to create a lifelike product semblance.

Product Image with Supporting Elements in Image: which is an image of a product on a white background, with additional elements that are not including when selling the product. The additional elements are to strengthen the product, not to create a 'Beauty shot' also referred to as a staged shot. It should incorporate additional items which enhance the product, (e.g. a glass of wine and stem of grapes with a bottle of wine (GTIN); fresh vegetables surrounding a bottled sauce (GTIN); a cooked and plated version of the product being sold in the same frame as the item, etc.)

3.4.1 File format

Storage: LZW Compressed TIFF

3.4.2 File size

2401 x 2401 – 4800 x 4800 pixels

3.4.3 Views

0 - Not applicable

1 - Front

2 - Left

3 - Top

7 - Back

8 - Right

9 - Bottom

3.4.4 Backgrounds and clipping path

Clipping path is required within one-pixel device; background should be removed to white (RGB 255/255/255)

3.4.5 File Naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-19 are mandatory for the Product Image type

Mandatory

Position	1-14	15	16	17	18	19
Data	GTIN	underscore	Image Type	Facing	Orientation	State
value	(n14)	_	D Primary Image High resolution w/ supporting elements.	0 - Not applicable	C - Centre	(1) In packaging
				1 - Front	L - Left	(0) Out of packaging
				2 - Left	R - Right	(A) Case
				3 - Top	N - No plunge angle	(B) Innerpack
				7 - Back		(C) Raw/uncooked considered edible.
				8 - Right		(D) Prepared
						(E) Plated
						(F) Styled
						(G) Staged
						(H) Held
						(J) Worn
						(K) Used
						(L) Family
				9 - Bottom		(M) Open Case
						(P) Pallet/Display

Optional

Position	20	21+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an…20)

Position 20 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09521234567820_D1C1_0622_s01.jpg

4   Optimised Images

4.1   Mobile Ready Hero Image (MRHI)

This image type addresses issues concerning the presentation of products in online retail environments on small screens, typically alongside 'add to basket' functions. The factors of screen size and limited attention span augment many of the problems already faced in desktop-centric online retail environments and can easily lead to a poor consumer experience. See GS1 Mobile Ready Hero Images Guideline.

4.1.1   File format

Storage: JPG/PNG

4.1.2   File size

600 x 600 (minimum) pixels

4.1.3   Views

1 - Front

4.1.4 Backgrounds and cropping

Clipping path is required within one-pixel device;
background should be removed to white (RGB 255/255/255)

4.1.5 File Naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-19 are mandatory for the Mobile Ready Hero Image type

Mandatory

Position	1-14	15	16	17	18	19
Data	GTIN	underscore	Image Type	Facing	Orientation	State
value	(n14)	_	H - MRHI	1 - Front	C - Centre	(1) In packaging
					L - Left	(0) Out of packaging
					R - Right	
					N - No plunge angle	

Optional

Position	20	21+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an...20)

Position 20 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

<GTIN>_H1C1_EN_0621_s01.jpg

<GTIN>_H1C0_s01.jpg

4.2 Optimised Hero Images

This image type is to support retail, consumers, distributors and foodservice operators in completing their online sites. These images will assist consumers to identify specific information about the products they are purchasing.

4.2.1 File format

Any
(JPG/PNG/GIF recommended)

4.2.2 File size

300x300 - 4200x4200 pixels

4.2.3 Views

0 - Not applicable

1 - Front

2 - Left

3 - Top

7 - Back

8 - Right

9 - Bottom

4.2.4 Backgrounds and cropping

Clipping path is required within one-pixel device;
background should be removed to white (RGB 255/255/255)

4.2.5 File Naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-19 are mandatory for the Optimised Hero Image type

Mandatory

Position	1-14	15	16	17	18	19
Data	GTIN	underscore	Image Type	Facing	Orientation	State
value	(n14)	_	U - Optimised Hero	0 - Not applicable	C - Centre	(1) In packaging
				1 - Front	L - Left	(0) Out of packaging
				2 - Left	R - Right	(A) Case
				3 - Top	N - No plunge angle	(B) Innerpack
				7 - Back		(C) Raw/uncooked considered edible.
				8 - Right		(D) Prepared
						(E) Plated
						(F) Styled
						(G) Staged
						(H) Held
						(J) Worn
						(K) Used
						(L) Family
				9 - Bottom		(M) Open Case
						(P) Pallet/Display

Optional

Position	20	21+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an...20)

Position 20 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

00012345000058_U1CF_EN_0622_s01_R.png

4.3 Product Image 360°/3D

360° degree imaging is product photography on a single axis – the product rotates on a single axis while the camera takes pictures at specified degree intervals. All images should be captured with the same plunge angle to ensure a smooth 360 result.

3D imaging is multiple 360° image series, with different plunge angles or rotational axes. These images series, or orbits, are then compiled in software to allow a left-right and up-down motion for product display and interaction.

4.3.1 File format

JPG/PNG

4.3.2 File size

400x400 (minimum) pixels

4.3.3 Backgrounds and cropping

Clipping path is optional

White Background recommended

4.3.4 Number of images

Minimum of 24 images (Maximum 360)

✅ **Note**: Larger items would benefit from an increased number of images to ensure a fluidity of motion. Industry applications should be considered for total image count.

4.3.5 Direction of rotation

The direction of rotation for image capture should be Clockwise.

Direction is determined from observing the sequence of images of the item from a centre top vantage point, looking down upon the object.

4.3.6 Plunge angle indicator

The 19-21st characters in the naming are 'R' and a two digit numeric plunge angle respectively. The plunge angle is measured from horizontal, with 0* placing the camera horizontally aligned with the product and 90* placing the camera perpendicular to the front face of the item.

4.3.7 Image sequence (Arc position)

The image sequence should be identified in the image name, or associated data, and should follow the stitching sequence used to complete the 360° pattern or mapping.

4.3.8 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimize the chances of rendering the file unreadable.

The naming convention for these images should be the following, where "R" is the Row and "C" is the column. The Row relates to the Plunge angle and the Column relates to the position in the arc around the item.

Example: **09520123456764_E1_R01_C01**

- 18th - _ (underscore)
- 19th – R (Plunge Angle Indicator)
- 20th-21st - 2-digit Row number
- 22nd - _ (underscore)
- 23rd – C (Arc Position Indicator)
- 24th-25th - 2-digit Column Number

Mandatory

Position	1-14	15	16	17	18	19	20-21	22	23	24-25
Data	GTIN	Under score	Image Type	Facing	Under score	Row (plunge)	Row number	Under score	Arc Pos.	Arc Value
value	(n14)	_	E - 360°/3D	0 - Not applicable	_	R	00-90	_	C	01-24
				1 - Front						
				2 - Left						
				3 - Top						
				7 - Back						
				8 - Right						
				9 - Bottom						

Optional

Position	26	27+	
Data	underscore	Serialisation	CPV
Value	_	s(n2)	CPV(an...20)

Position 26 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:
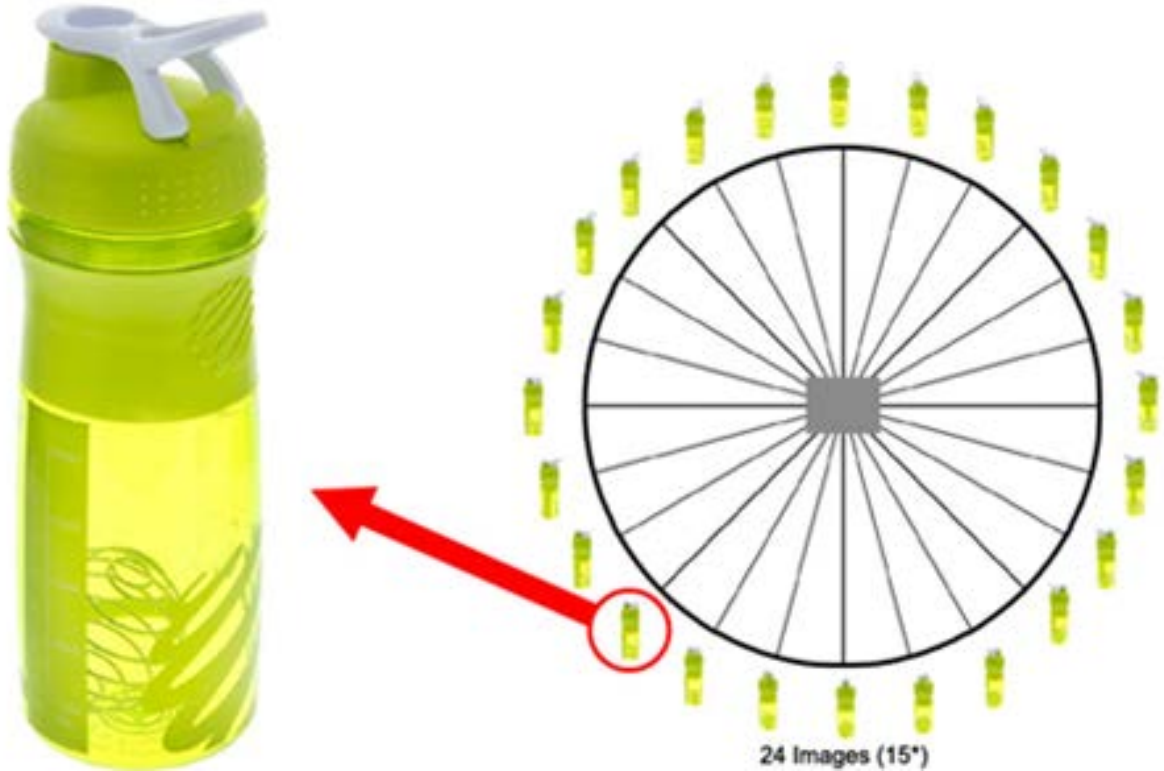
09521234567837_E1_RO4_C01.jpg

4.4   3D Rendered

3D rendered models, or Digital Twins, are digital constructs which can be inserted into video files, or from which product still shots can be extracted. These are standalone files, rather than digital images.

4.4.1   File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimize the chances of rendering the file unreadable.

Position 1-16 are mandatory for the 3D Rendered file type.

GDTI Is recommended for the elements within the file.

Mandatory

Position	1-14	15	16
Data	GTIN	Under score	Image Type
value	(n14)	_	3DR

Optional

Position	20	21+			
Data	underscore	Language	Image End Date	Serialisation	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	CPV(an...20)
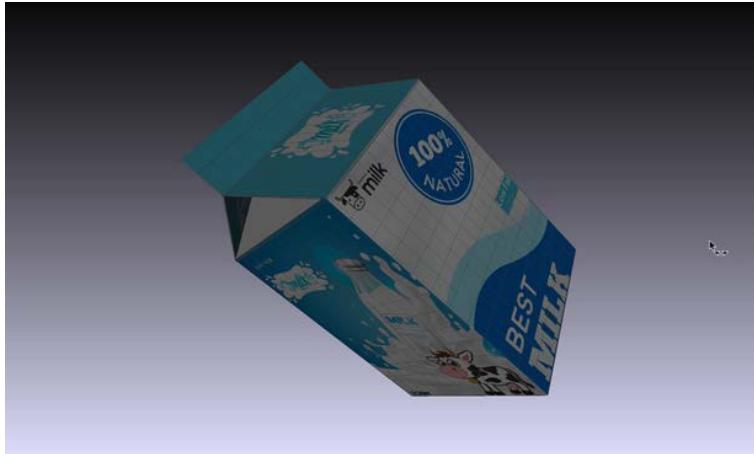
5 Secondary Images

5.1 Content/Texture

The 'content/texture' image type shows images that depict the content or texture of a product. The image should be designed in such a way that the texture can be experienced by the end user similarly to in stationary retail, e.g. creme, lipstick.

5.1.1 File format

Any (Storage: LZW Compressed TIFF; JPG; PNG; GIF)

5.1.2 File size

300 x 300 – 4800 x 4800 pixels

5.1.3 Backgrounds and cropping

Clipping path is optional within one-pixel device;
background may be removed to white (RGB 255/255/255)

5.1.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimize the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Content/Texture Image type.

Mandatory

Position	1-14	15	16
Data	GTIN	Under score	Image Type
value	(n14)	_	T - Content/Texture

Optional

Position	17	18+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an...20)

Position 17 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09521234567844_T_0622_s01.jpg

5.2   Detail/Technology Image

A Detail (Technology) image is a photo, line art or other graphic representation of a specific product feature or characteristic. It is used to highlight that specific detail of an item.

5.2.1   File format

Any (Storage: LZW Compressed TIFF; JPG; PNG; GIF)

5.2.2   File size

300 x 300 – 4800 x 4800 pixels

5.2.3   Backgrounds and cropping

Clipping path is optional within one-pixel device;
background may be removed to white (RGB 255/255/255)

5.2.4   File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimize the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Detail/Technology Image type.

Mandatory

Position	1-14	15	16
Data	GTIN	Under score	Image Type
value	(n14)	_	F - Detail/Technology

Optional

Position	17	18+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an...20)

Position 17 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09521234567851_F_0622_s01.jpg

5.3 Montage/Composition Image

A Montage (composite) image is the result of digital over layering of distinct images to create a final image.
This process allows for a composite to be created with the future possibility of reconstruction using the base images without having to return to studio for correction, should an element be added or removed.

Examples of Montages image type include:

Image depicting the item with contents/flask/can/pen with cap closed or open.

Image showing outer packaging with the flask in front of it.

5.3.1 File format

LZW Compressed TIFF

5.3.2 File size

900 x 900 – 2400 x 2400 pixels

5.3.3 Backgrounds and cropping

Clipping path is required within one-pixel device;

background should be removed to white (RGB 255/255/255)

5.3.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimize the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Montage/Composition Image type.

Mandatory

Position	1-14	15	16	17	18	19-21
Data	GTIN	underscore	Image Type	Facing	underscore	Serialisation

Position	1-14	15	16	17	18	19-21
value	(n14)	_	M - Montage/Composition	1 - Front	_	s(n2)
				2 - Left		
				3 - Top		
				7 - Back		
				8 - Right		
				9 - Bottom		

Optional

Position	22	23+
Data	underscore	CPV
Value	_	CPV(an...20)

Position 22 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09521234567851_M1_s01.jpg

09521234567868_M1_s23.jpg

5.4 Social Media

The 'social media' image type shows assets with media content.

5.4.1 File format

Any (Storage: LZW Compressed TIFF; JPG; PNG; GIF)

5.4.2 File size

900 x 900 – 4800 x 4800 pixels

5.4.3 Backgrounds and cropping

Clipping path is optional within one-pixel device;
background may be removed to white (RGB 255/255/255)

5.4.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimize the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Social Media Image type.

Mandatory

Position	1-14	15	16
Data	GTIN	underscore	Image Type
value	(n14)	_	K - Social Media

Optional

Position	17	18+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an…20)

Position 17 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09521234567875_K_fr_0622_s01.tif

5.5 Application

The 'application' image type is used to depict how the product itself is used.

5.5.1 File format

Any (Storage: LZW Compressed TIFF; JPG; PNG; GIF)

5.5.2 File size

300 x 300 – 4800 x 4800 pixels

5.5.3 Backgrounds and cropping

Clipping path is optional within one-pixel device;
background may be removed to white (RGB 255/255/255)

5.5.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Application Image type.

Mandatory

Position	1-14	15	16
Data	GTIN	underscore	Image Type
value	(n14)	_	N - Application

Optional

Position	17	18+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an…20)

Position 17 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09521234567882_N_de_0622_s01.tif

5.6 Ambience/Mood

The 'ambience/mood' image type shows images used as 'mood images'.

5.6.1 File format

Any (Storage: LZW Compressed TIFF; JPG; PNG; GIF)

5.6.2 File size

300 x 300 – 4800 x 4800 pixels

5.6.3 Backgrounds and cropping

Clipping path is optional within one-pixel device;
background may be removed to white (RGB 255/255/255)

5.6.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Ambience/Mood Image type.

Mandatory

Position	1-14	15	16
Data	GTIN	underscore	Image Type
value	(n14)	_	R - Ambiance/Mood

Optional

Position	17	18+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an...20)

Position 17 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09521234567899_R_fr_0622_s01.gif

5.7 Size comparison

The 'size comparison' image type makes clear the actual size of the product, e.g. via a schematic depiction of a person or well-known object (e.g. one-euro coin) in the background.

5.7.1 File format

Any (Storage: LZW Compressed TIFF; JPG; PNG; GIF)

5.7.2 File size

300 x 300 – 4800 x 4800 pixels

5.7.3 Backgrounds and cropping

Clipping path is optional within one-pixel device;
background may be removed to white (RGB 255/255/255)

5.7.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Size Comparison Image type.

Mandatory

Position	1-14	15	16
Data	GTIN	underscore	Image Type
value	(n14)	_	Q - Size Comparison

Optional

Position	17	18+				
Data	underscore	Language	Image End Date	Serialisation	Rendered Image	CPV
Value	_	(a2) or (a2-A2)	(MMYY)	s(n2)	R	CPV(an…20)

Position 17 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456788_Q_0622_s01.png

5.8 Nutritional Label

The Nutritional Label is a portion of the full flat layout, specifically identifying the regulated information related to a product's nutritional composition. Given the nature of the content, this image type only applies to consumable food products.

5.8.1 File format

Storage: LZW Compressed TIFF; JPG

5.8.2 File size

600 x 600 (minimum) pixels

5.8.3 Backgrounds and cropping

Clipping path is optional

5.8.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Nutritional Label Image type.

Mandatory

Position	1-14	15	16 -17
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L2 - Nutritional

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an…20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456702_L2_s01_CPV123ABC.tif

5.9   Ingredients

The Ingredients image is a list of ingredients printed on the packaging. It may be separated by language in multiple areas on the product and should be identified with the language expressed in the metadata associated and the appropriate position for GTIN based naming.

5.9.1   File format

Storage: LZW Compressed TIFF; JPG

5.9.2   File size

600 x 600 (minimum) pixels

5.9.3   Backgrounds and cropping

Clipping path is optional

5.9.4   File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Ingredients Image type.

Mandatory

Position	1-14	15	16 - 17
Data	GTIN	underscore	Image Type - PACKAGING
value	(n14)	_	L4 -Ingredients

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456719_L4_fr_s01_CPV123ABC.jpg

5.10 Nutritional/Ingredients combined

Where regulations permit the combination of nutritional and ingredients, the Nutritional/Ingredients Combined image type will be used.

The language expressed should be identified in the metadata associated and the appropriate position for GTIN based naming.

5.10.1 File format

Storage: LZW Compressed TIFF; JPG

5.10.2 File size

600 x 600 (minimum) pixels

5.10.3 Backgrounds and cropping

Clipping path is optional

5.10.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Nutritional/Ingredients Image type.

Mandatory

Position	1-14	15	16 - 17
Data	GTIN	underscore	Image Type - PACKAGING
value	(n14)	_	L5 -Nutritional & Ingredients

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456726_L5_s17_CPV123ABC.jpg

5.11   Marketing Content Code (QR Code)

The Marketing Content Code image is used for any consumer facing code applied to the product. (e.g. A GS1 QR Code supporting a url)

Where marketing applications employ different links embedded in the codes, more than one image may be required, and should be differentiated with the serialisation tag in GTIN based naming.

5.11.1   File format

Storage: LZW Compressed TIFF; JPG

5.11.2   File size

600 x 600 (minimum) pixels

5.11.3   Backgrounds and cropping

Clipping path is optional

5.11.4   File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Marketing Content Code (QR Code) Image type.

Mandatory

Position	1-14	15	16 - 17
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L6 -QR Code

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456733_L6_CPV123ABC.tif

5.12 Certification Seals/Claims

The certification seal or claim image (one or many) would be used to specifically identify the information related to a product's certifications, claims or seals (regulatory, marketing, etc.), that appear on any level of a products hierarchy (case, inner, each). This file field can be further described with the content description value if applicable.

5.12.1 File format

Storage: LZW Compressed TIFF; JPG

5.12.2 File size

600 x 600 (minimum) pixels

5.12.3 Backgrounds and cropping

Clipping path is optional

5.12.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Certification Seals/Claims Image type.

Mandatory

Position	1-14	15	16 - 17
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L7 -Certification Seals/Claims

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456740_L2_fr.jpg

5.13   Preparation Instructions

The preparation instructions would be used to specifically identify the information related to a product's recommended preparation steps identified on the product packaging.

The language indicator should be used where the instructions are available in multiple languages.

5.13.1   File format

Storage: LZW Compressed TIFF; JPG

5.13.2   File size

600 x 600 (minimum) pixels

5.13.3   Backgrounds and cropping

Clipping path is optional

5.13.4   File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Preparation Instructions Image type.

Mandatory

Position	1-14	15	16 - 17
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L8 - Preparation Instructions

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456757_L8_fr_CPV123ABC.jpg

5.14 Petfood Feeding Instructions/Ingredients

The feeding recommendations would identify suggested quantities and frequency of feeding based on age and weight. The Ingredients or guaranteed analysis image is a list of ingredients or breakdown of composition printed on the packaging.

The language indicator should be used where the instructions are available in multiple languages.

5.14.1 File format

Storage: LZW Compressed TIFF; JPG

5.14.2 File size

600 x 600 (minimum) pixels

5.14.3 Backgrounds and cropping

Clipping path is optional

5.14.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Pet Feeding Instructions/Ingredients Image type.

Mandatory

Position	1-14	15	16 - 17
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L9 - Petfood Feeding/Ingredients

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456764_L9_en.tif

5.15 Safe Handling Instructions

These images should be of Safe Handling Instructions as they would appear somewhere on any hierarchy level of the product packaging or a sheet that may accompany the product (physically or digitally).

5.15.1 File format

Storage: LZW Compressed TIFF; JPG

5.15.2 File size

600 x 600 (minimum) pixels

5.15.3 Backgrounds and cropping

Clipping path is optional

5.15.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Safe Handling Instructions Image type.

Mandatory

Position	1-14	15	16 - 18
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L10 - Safe Handling Instructions

Optional

Position	19	20+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 19 and beyond are optional, each component must be preceded by an underscore '_'

5.16 Sidekick Images

This image type is used to support foodservice. Retail, consumers, distributors and foodservice operators complete their online transactions using their smart devices. These images may be used to inform a customer of benefits or nutritional claims of a product. This is a supplementary image or graphic, generally used to support the Hero image.

5.16.1 File format

Any

(JPG/PNG/GIF recommended)

5.16.2 File size

300x300 - 4200x4200 pixels

5.16.3 Backgrounds and cropping

Clipping path is optional within one-pixel device;
background may be removed to white (RGB 255/255/255)

5.16.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-16 are mandatory for the Sidekick Image type.

Mandatory

Position	1-14	15	16
Data	GTIN	underscore	Image Type
value	(n14)	_	S - Sidekick

Optional

Position	17	20+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 17 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456771_S_en_s01_CPV123ABC.jpg

6   Technical Images

Due to the nature and application of technical images,

6.1   Planogram Image and Data Field Specifications

A planogram is a visual merchandising tool. Planograms are detailed drawings of a store layout with special attention on product placement. Planogram images and associated data are loaded into software to generate a replica of a store shelf or layout, adjusting the images based on the associated data (such as height, width, depth, nesting, peg hole, etc...) to estimate the number of products which can fill the marketable space available.

6.1.1 File format

File formats must be as follows:

- Targa 16-32 bit (If 32 then alpha must be I/O), no compression
- PNG (must be alpha channel compatible and have a transparent background)
- JPEG, level of compression to be at 10 or above

✅ **Note**: JPEG images are not alpha channel compatible with all imaging software.

6.1.2 File size

Minimum image size for all marketable face planogram images shall be 20kB minimum (50kB for Targa images)

6.1.3 Views

All products that are produced in a package should be represented with up to 6 views of the In-Package consumer pack, with 3 views as a minimum straight-on front, straight-on top, and straight-on left side views. Items that are not produced in a package, such as hammers, must be represented with the same above 3 views. An additional straight-on front view of an inner pack should be available when appropriate. The GS1 Package and Product Measurement Standard defines what the 'Default Front' of a product is.

Valid image views are:

09520123456788.1
straight on, front shot

09520123456788.2
straight on, left view

09520123456788.3

straight on, top view

Optional image views:

09520123456788.7
straight on, back shot

09520123456788.8
straight on, right view

09520123456788.9

straight on, bottom view

6.1.4 Backgrounds and cropping

Images for contour products must appear with a transparent background. Images for contour and non- contour products must also be cropped to products' edge. No props or additional products are allowed within the primary image areas.

- ☐ Boxes type products are cropped to the edge and represented on a white background
- ☐ Hard corner boxes, were the cropped image leaves no background for close cropping alpha channel identification, shall be saved without a transparent layer level.
- ☐ Rounded or odd shaped type products should be contoured and represented with a transparent background
- ☐ Rounded or odd shaped type products can also be cropped to the products edge and represented on a white background.

6.1.5 File naming

First 14 characters are the GTIN of the product (required). After the first period, the planogram view indicator will be present (required).

The standard image naming indicators are:

(GTIN) .1 front face   (GTIN) .2 left of front   (GTIN) .3 top

| (GTIN) .7 back | (GTIN) .8 right of front | (GTIN) .9 bottom |

Note: For peg hole flat products: If the product side 2,3,8 and 9 are less than 1/2cm and have no viewable marketing information images may be omitted.

#### 6.1.5.1 Additional naming for Alternate/Display/Tray

In the subsections you will find examples for additional sub-naming rules for use with items that may require additional image/data for accurate planogramming.

6.1.5.1.1 Alternate naming

In some instances, more than one 'front' exists due to alternate graphics.

GTINs with multiple graphic layouts that do not conflict with the GTIN allocation rules should be identified with 'A' for Alternative.

Examples:
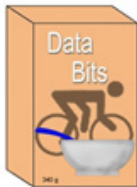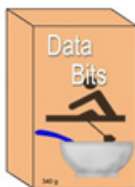
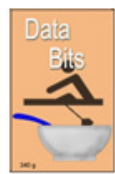**09520123456795.1**

09520123456795A.1

6.1.5.1.2 Display Naming (retail ready packaging)

If the GTIN is unique to a display the image will be named using the display GTIN as well as the inner product GTIN followed by its appropriate identifier ('T' for tray , 'D' for display, and 'A" for alternate)

Retail ready packaging, also known as shelf ready packaging, is ready-to-sell secondary packaging. Primary packaging contains the product and secondary packaging protects the primary packaging. RRP is placed directly onto the shelf without the need for unpacking the inner contents.

09520123456702.1

✅ **Note**: A display may also be considered a tray (e.g. a box of chocolate bars) Where this is the case, if there is a marketing 'flap' or display component which alters the dimensions compared to the dimensions of the unopened tray, the identifier 'Display' should be used.

6.1.5.1.3 Tray Naming (retail ready packaging)

If the GTIN is unique to a tray the image will be named using the tray GTIN as well as the inner product GTIN followed by its appropriate identifier ('T' for tray , 'D' for display, and 'A" for alternate)

Retail ready packaging, also known as shelf ready packaging, is ready-to-sell secondary packaging. Primary packaging contains the product and secondary packaging protects the primary packaging. RRP is placed directly onto the shelf without the need for unpacking the inner contents.

09520123456719T.1

09520123456719T.2

✅ **Note**: A tray may also be considered a display (e.g. a box of chocolate bars) Where this is the case, if there is a marketing 'flap' or display component which alters the dimensions compared to the dimensions of the unopened tray, the identifier 'Display' should be used.

6.2   Sample/Mock-up

The Sample (Prototype)/Mock-up Image is generally created whether the product is ready for ordering or is still in production (pre-production) stage.

It can be a sketch (line art drawing) an image or a computer-generated rendering. The drawing should only depict the style and be free of dimensions and other technical details.

The image is intended exclusively for internal use and communication between business partners (b2b) and is used to conceptualize the product for the ordering process.

✅ **Note**: Due to the nature of the image, only GDTI naming may be employed for this image type.

6.2.1   File format

JPG, PDF

6.2.2   File size

n/a (generally 500kb or less)

6.2.3   Backgrounds and cropping

Clipping path is optional

6.2.4   File naming

GDTI

6.3   Full Flat

A Full Flat is the term used for the final print layout of a product's packaging. It is generally the print layout for any and all information that will appear on the final product. These images may include

images of cans, jars, trays, etc. and should be STITCHED or UNSTITCHED images. If these images are sent unstitched, sequencing would be recommended to be utilized.

6.3.1 File format

Storage: LZW Compressed TIFF; JPG, PDF

6.3.2 File size

600 x 600 (minimum) pixels; Square aspect ratio not required.

6.3.3 Backgrounds and cropping

Clipping path is optional

6.3.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Full Flat Image type.

Mandatory

Position	1-14	15	16 - 17
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L1 - Full Flat

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:
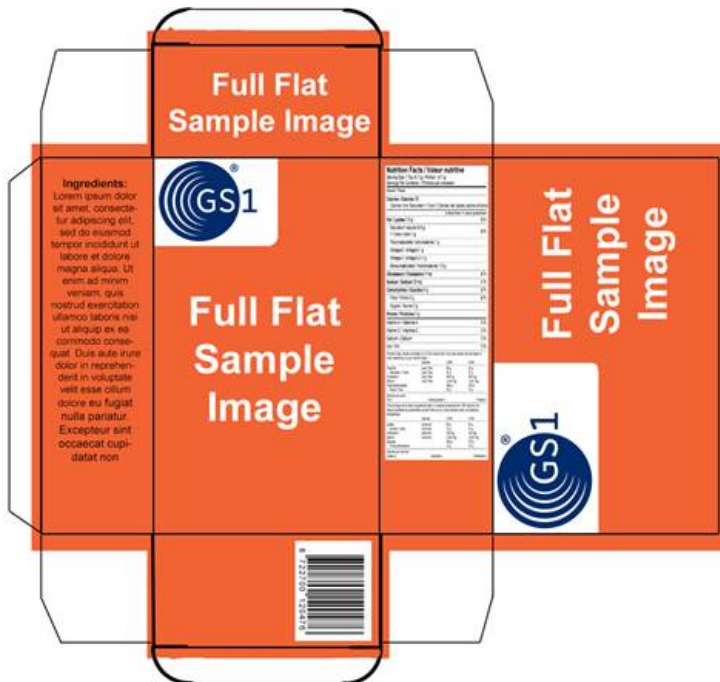
09520123456733_L1_en_s01.tif

6.4 Barcode

The Barcode image is used for any symbol applied to the product for the purposes of trade. Multiple instances may exist if the product is traded in industries with different machine-readable applications (e.g. retail & regulated healthcare) in such cases more than one image may be required, and should be differentiated with the serialisation tag in GTIN based naming.

6.4.1 File format

Storage: LZW Compressed TIFF; JPG; PDF; SVG

6.4.2 File size

600 x 600 (minimum) pixels; Square aspect ratio not required.

6.4.3 Backgrounds and cropping

Clipping path optional

6.4.4 File naming

A filename (or file name) is a name used to uniquely identify a computer file stored in a file system. Different file systems impose different restrictions on filename lengths and the allowed characters within filenames.

The components required to identify a file varies across operating systems, as does the syntax and format for a valid filename.

For the purposes of this document, the filename discussion shall focus on the base name of the file excluding the file format/extension. File format/extensions should only be added by the software generating or modifying the file to minimise the chances of rendering the file unreadable.

Position 1-17 are mandatory for the Barcode Image type.

Mandatory

Position	1 - 14	15	16 - 17
Data	GTIN	underscore	Image Type PACKAGING
value	(n14)	_	L3 - Barcode

Optional

Position	18	19+		
Data	underscore	Language	Serialisation	CPV
Value	_	(a2) or (a2-A2)	s(n2)	CPV(an...20)

Position 18 and beyond are optional, each component must be preceded by an underscore '_'

Examples of product naming:

09520123456740_L3_s01_CPV123ABC.tif

7 Identification and Metadata

7.1 Identification

Identification of an image or file is different than naming of the same, when properly assigned and embedded within the file's metadata, identification can survive renaming. File identification should be unique, the current file naming structure allows for reuse to ensure that a new image can be easily introduced into the process with minimal effort.

GDTI (Global Document Type Identifier) is the recommended identification method, to uniquely identify a file.

7.2 Metadata list

When leveraging the ability for a file (image, document, etc...) to contain its own micro database, the list below should be used; its composition should include comparative and explorative items it assists in finding and matching the document to its associated data.

Metadata Attribute	Definition	R/O/D	GS1 Web Vocabulary Name	GS1 Web Vocabulary Definition
GDTI	A GS1 GDTI, a unique document identifier for the digital asset. This may or may not be the same value as the filename.	Recommended	gs1:gdti	

Metadata Attribute	Definition	R/O/D	GS1 Web Vocabulary Name	GS1 Web Vocabulary Definition
Brand Name	The Brand Name of the product in the image.	Recommended	gs1:brandName	The brand name of the product that appears on the consumer package.
Product Name	The name of the product.	Recommended	gs1:productName	Consumer friendly short description of the product suitable for compact presentation.
Valid From Date	Earliest date from when the image can be used or may be shown.	Recommended	gs1:referencedFileEffectiveStartDateTime	The date upon which the target of this external link begins to be effective for use.
GTIN	Global Trade Item Number	Recommended	gs1:gtin	The GS1 identification key used to identify trade items. The key comprises a GS1 Company Prefix followed by an Item Reference Number and a check digit.
Alternative Text (Alt Text)	Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language	Optional	gs1:alternativeText	Guidance on the use of Alternative Text (Alt Text) can be found on https://www.w3.org/standards/webdesign/accessibility
Angle Indicator	Angle at which the image was taken when compared to the front face of the product.	Optional	gs1:referencedFileImageAngle	PROPOSED Web Vocabulary attribute.
Article Variant		Optional	gs1:productionVariantDescription	Free text assigned by the manufacturer to describe the production variant. Examples are: package series X, package series Y.
Camera Data		Optional		
Clipping Path Name		Optional		PROPOSED: gs1:referencedFileImageClippingPathName
Colour Mode		Recommended		
Copyright		Optional		
Create Date		Recommended		

Metadata Attribute	Definition	R/O/D	GS1 Web Vocabulary Name	GS1 Web Vocabulary Definition
Description		Optional	gs1:productDescription	An understandable and useable description of a trade item using brand and other descriptors. This attribute is filled with as little abbreviation as possible while keeping to a reasonable length. Free form text field, this data element is repeatable for each language used and must be associated with a valid ISO language code. Field length is 178 characters. This should be a meaningful description of the trade item with full spelling to facilitate message processing. Retailers can use this description as the base to fully understand the brand, flavour, scent etc. of the specific GTIN in order to accurately create a product description as needed for their internal systems. Examples: GS1 Brand Base Invisible Solid Deodorant AP Stick Spring Breeze GS1 Brand Laundry Detergent Liquid Compact Regular Instant Stain 1 GS1 Brand Hair Colour Liquid Light to Medium Blonde.
Expiration Date	After this time, the image is not be shown	Optional	gs1:referencedFileEffectiveEndDateTime	The date upon which the target of this external link ceases to be effective for use.
Facing Indicator	Value to denote which way the product is facing within the image.	Optional	gs1:referencedFileFacingIndicatorType	PROPOSED Web Vocabulary attribute.
File/Nature Type	Explanation of the type of image shot taken.	Optional	gs1:referencedFileImageNatureType	PROPOSED Web Vocabulary attribute
Filename	The filename of the digital asset. GDTI is preferred.	Dependent	gs1:referencedFileName	The name of the file that contains the external information
Functional Name		Optional	Gs1:functionalName	Describes use of the product or service by the consumer. Should help clarify the product classification associated with the GTIN.
GEO Coordinates	(Longitude, Latitude, Height)	Optional	gs1:latitude / gs1:longitude	PROPOSED: gs1altitude
Image Quality Assurance Date	The date when the image was verified to meet GS1 global standard.	Optional		PROPOSED: gs1:referencedFileImageQualityAssuranceDate
Indication Clipping Path Present		Optional		PROPOSED: gs1:referencedFileHasImageClippingPath

Metadata Attribute	Definition	R/O/D	GS1 Web Vocabulary Name	GS1 Web Vocabulary Definition
Legal Owner	Owner of the digital file	Optional	gs1:legalOwner	PROPOSED: expects a value of gs1:Organisation (which can relate to a gs1:PostalAddress and a gs1:ContactPoint)
Legal Owner Contact Information	Contact information for the legal owner	Optional	gs1:contactPoint	Relates a gs1:Organisation to a gs1:ContactPoint class That specifies contact information (e.g. email, fax, telephone) and a gs1:contactType or gs1:responsibility (free-form text string, which could be 'legal owner of image' Recommendation: Create additional web vocabulary to align to this requirement - gs1:legalOwner expects a value of gs1:Organisation (which can relate to a gs1:PostalAddress and a gs1:ContactPoint)
Max Avail Height		Optional		
Max Avail Width		Optional		
Net Content	what quantity of product is provided	Optional	Gs1:netContent	The amount of the trade item contained by a package, usually as claimed on the label. For example, Water 750ml - net content = "750 MLT" ; 20 count pack of diapers, net content = "20 ea.". In case of multi-pack, indicates the net content of the total trade item. For fixed value trade items use the value claimed on the package, to avoid variable fill rate issue that arises with some trade item which are sold by volume or weight, and whose actual content may vary slightly from batch to batch. In case of variable quantity trade items, indicates the average quantity.
Number of the image	e.g. "001V" for the front view of the promotional-optimised product image.	Optional		PROPOSED: gs1:referencedFileImageNumber
Packaging Type	The dominant means used to transport, store, handle or display the product as defined by the data source	Optional	gs1:hasPackaging	Datatype = Packaging
Product Net Content	Net Content of the product in text	Optional	gs1:netContent	Datatype = gs1:QuantitativeValue
Product Supplier	The Name of the product's supplier/manufacturer.	Optional	gs1:manufacturer	Datatype: Organisation

Metadata Attribute	Definition	R/O/D	GS1 Web Vocabulary Name	GS1 Web Vocabulary Definition
Product URL	URL link to additional information (i.e., Detail page of the digital file).	Optional		
Rights of Use	No Entry of the right to use means an unrestricted right to use the product image.	Optional		
Special Rights	Special rights should be defined as free text	Optional		
Variant Description		Optional	Gs1:variantDescription	Free text field used to identify the variant of the product. Variants are the distinguishing characteristics that differentiate products with the same brand and size including such things as the particular flavour, fragrance, taste.
Version Number	A version number is assigned for each product image, starting with value 1	Optional	gs1:consumerProductVariantIdentification	The identification for a particular Consumer Product Variant . This identification is based upon guidelines and assignment to the GS1 General Specifications.
Referenced File Type Code	Code to describe the placement of the product and its associated packaging.	Optional	gs1:referencedFileTypeCode	Suggest to define additional instances of gs1:ReferencedFileTypeCode in addition to existing values such as: gs1:ReferencedFileTypeCode-PRODUCT_LABEL_IMAGE gs1:ReferencedFileTypeCode-LOGO Gs1:ReferencedFileTypeCode-PRODUCT_IMAGE
URI	Uniform Resource Identifier	Optional	gs1:referencedUniformResourceIdentifier	Simple text string that refers to a resource on the internet, URLs may refer to documents, resources, people, etc.

A   Image Types

	Section	16th	Image type
Optimised	4.4	3DR	3D Rendered
Secondary	5.6	R	Ambience/Mood
Secondary	5.5	N	Application
Secondary	6.4	L3	Barcode
Secondary	5.12	L7	Certification Seals/Claims
Secondary	5.1	T	Content/Texture
Secondary	5.2	F	Detail/Technology Image
Secondary	5.9	L4	Ingredients
Secondary	5.11	L6	Marketing Content/QR Code
Optimised	4.1	H	Mobile Ready Hero Image (MRHI)
Secondary	5.3	M	Montage/Composition Image
Secondary	5.8	L2	Nutritional Label
Secondary	5.1	L5	Nutritional/Ingredients combined
Optimised	4.2	U	Optimised Hero Image
Secondary	5.14	L9	Petfood Feeding Instructions/Ingredients
Technical	6.1	N/A	Planogram
Secondary	5.13	L8	Preparation Instructions
Primary	3.3	C	Product Image (High Resolution)
Primary	3.1	A	Product Image (web)
Optimised	4.3	E	Product Image 360°/3D
Primary	3.4	D	Product Image with Supporting Elements (High Resolution)
Primary	3.2	B	Product Image with Supporting Elements (web)
Secondary	5.15	L10	Safe Handling Instructions
Technical	6.2	L1	Sample (Prototype)/Mock-up Image/Full Flat
Secondary	5.16	S	Sidekick
Secondary	5.7	Q	Size comparison
Secondary	5.4	K	Social Media

Character position	Value	Description
18 Only one may be used	C	C - Centre
	L	L - Left
	R	R - Right
	N	N - No plunge angle
	_	(underscore)
	(N3)	Sequence Number (3 character numeric)
19 Only one may be used	1	(1) In packaging
	0	(0) Out of packaging (i.e., the product as it first arrives "out of packaging" not how it appears after it has been processed or prepared)
	A	(A) Case – A shot of the product in its case as it would appear to the operator upon delivery.

Character position	Value	Description
	B	(B) Innerpack – A shot of the product as it would appear inside its packaging inside the case.
	C	(C) Raw/uncooked – A shot of a product that has not been cooked or processed or that needs to be cooked or further prepared before it is considered edible.
	D	(D) Prepared - A shot of a product that has been taken from a raw or uncooked state to a cooked state according to the appropriate method of preparation (e.g., baked, fried, grilled or boiled).
	E	(E) Plated - Prepared food arranged simply on a serving plate, dish or bowl for better visibility. May include an additional step, such as garnishing, icing, seasoning or other enhancement
	F	(F) Styled - Carefully and artfully arranged for an attractive visual presentation, and designed to suggest the taste, aroma and appeal of the actual dish. May include complementary items (e.g., an entrée and sides) to present the impression of a complete meal. May also include an additional step, such as garnishing, icing, seasoning or other enhancement. May be presented with different backgrounds and at different angles.
	G	(G) Staged - A shot of a product that has been arranged for display in such a way as to provide clear visibility. The product may be propped up if necessary for optimum viewing, but it should not be held or used in any way by a person.
	H	(H) Held - A shot of a product that has been held out for display by one hand or a pair of hands. When relevant, proper grip should be demonstrated. Apart from the hands and forearms, no part of the person holding the item should be visible.
	J	(J) Worn - A shot of a product, such as a protective item or article of clothing, which is worn by a person. The complete product should be visible inside the frame, but the individual wearing it should be cropped out as much as possible.
	K	(K) Used - A shot of a product as it is meant to be used in its appropriate environment. Small utensils may be held in a hand or hands and used for their intended purpose.
	L	(L) Family - A shot of a number of related products (e.g., matched sets, place settings) arranged together in a single picture.
	M	(M) Open Case - A shot of a case, flaps open, that shows how the product(s) would look when an operator receives the product and opens the case.
	P	(P) Pallet/Display – An image comprised of the product in a display or pallet configuration.
*After mandatory elements	(a2) or (a2-A2)	Language Indicator (2 character alpha):ISO639 format - Example syntax for populating a country variation of a Language Code attribute: aa or optionally aa-AA where aa = ISO 639-1 code list, must be lower case where AA =ISO 3166-1 Country Code, 2 Alpha character representation, must be upper case to be used only if multiple faces of dissimilar languages occur.
	S(N2)	Serialisation/Sequence Number (3 character alphanumeric): lowercase 's' followed by 2 numeric digits for Sequence number will be added at the end of file name with the following format: xxxx_sNN (underscore, lowercase "s" and then 2 numeric mandatory)