Global Tooling Supplier Packaging Guidelines



Keeping our customers in the lead



Global Tooling Supplier Packaging Guidelines

This document is controlled by:

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1. Purpose

To clearly define packaging and labeling requirements for Husky Suppliers who deliver product to one of Husky's manufacturing or warehousing locations.

2. Scope / Applicability

This standard applies to all material items shipped to and/or at designated Husky pre-authorized locations. It applies to all Suppliers including other Husky departments/plants. This document is invoked on all Purchase Orders placed, unless specific written exemption is issued by Husky GSC representative.

3. Abbreviations and Definitions

3.1 Abbreviations

ABS	Acrylonitrile Butadiene Styrene
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
СМ	Commodity Manager
DB	Deutsche Bahn
DIN	Deutsches Institut fur Normung (The German Institute for Standardization)
ECT	Edge Crush Test
EHS	Environment, Health and Safety
EPAL	European Pallet Association
EU	European Union
EURO	European
GSC	Global Supply Chain
HDPE	High Density Polyethylene
HPN	Husky Part Number
IPPC	International Plant Protection Convention
ISO	A Greek word meaning "equal"
LDPE	Low Density Polyethylene
NWPCA	National Wood Pallet Container Association
OSHA	Occupational Safety & Health Act
PET	Polyethylene terephthalate
РО	Purchase Order

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PP **P**olypropylene

PS **P**olystyrene

PPM Parts Per Million

PVC Polyvinyl Chloride

SPC Statistical Process Control

SQE Supplier Quality Engineer

VCI Vapour Corrosion Inhibitors

WHMIS Workplace Hazardous Materials Information System

3.2 Definitions

- Code 39 The first alpha-numeric symbology that originally encoded 39 characters (now 43) including uppercase letters (A - Z), digits (0 - 9) and a few special characters like the \$ sign. The entire ASCII character set can be encoded using Code 39's Full ASCII mode. It is typically the nonfood standard barcode, and is used for ID, inventory, and tracking purposes in various industries such as manufacturing and warehousing.
- **Code 128** The Code 128 symbology is a more compact code than the Code 39 barcode, and it encodes a larger selection of characters; often used in the shipping and electronics industry.

DB Deutsche Bahn is one of three possible Euro pallet markings.

- DIN Deutsches Institut fur Normung: The German Institute for Standardization offers a platform for the development of standards as a service to industry, the state and society as a whole. (DIN is a registered non-profit association based in Berlin since 1917).
- **EURO** Descriptor of pallet types when used in the context of packaging.
- Gaylord A Gaylord container is a large type of box used for packing bulk items for shipping or storage purposes. The box is made from corrugated fiberboard and can be double or triple walled. These boxes come in different sizes and strengths and are typically stronger than a traditional cardboard box.
- VCI Usually in film, paper or pad form
- EPAL Founded in 1991 to work with the European Railways to maintain a European-wide quality assurance and inspection standard for the "EURO" pallet.
- ISO The International Organization for Standardization uses the word "ISO" not because it's an acronym (that would be "IOS"), but because it comes from the Greek word "isos".
- **OSHA** A governing body for health and safety

Sub Pack Package intended to be lifted by hand

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4. Guidelines

4.1 Responsibilities

- 4.1.1 The Supplier shall:
 - ensure that adequate packaging is used for direct materials to secure their proper condition and quality upon delivery to Husky (initial packaging as well as during transportation);
 - maintain cleanliness of returnable packaging and dunnage when applicable;
 - utilize, when practical, a single size container, package, and/or pallet containing a standard quantity for each part number supplied;
 - request authorization from Husky GSC representative (SQE or CM) upon "modifications" of existing packaging or "new" packaging proposal;
 - request more information from Husky GSC representative should packaging requirements or related information are unclear;
 - store returnable packaging and dunnage at their site when required;
 - ensure that established minimum number of containers is available at the supplier's location when they are needed;
 - ensure that authorized back-up packaging is available with minimum quantity and managed the same way as primary packaging;
 - ensure that back-up packaging are approved (size, quantity of parts etc) by Husky' SQE before use;
 - notify Husky GSC representative whenever back-up packaging is used, prior to shipping, with an explanation;
 - not include information relating to quality or Intellectual Property on shipping identification labels;
 - not apply adhesive-backed color tags to any of the required labels described herein;
 - be responsible for the removal of all old labels; and
 - ensure that packing list matches the contents of the shipment.

4.1.2 The SQE shall:

- include packaging as mandated part qualification requirement and ensure that packaging is included in the supplier manufacturing process; and
- provide necessary packaging information or any other related concerns raised by the supplier.

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4.2 General requirements

- 4.2.1 Parts must arrive at Husky without damage, rust, corrosion, or contamination.
- 4.2.2 Although packaging authorization is required, such authorization does not relieve the supplier of their responsibility to ensure adequate packaging for proper delivery of parts to Husky.
- 4.2.3 Packaging shall not be a source of contamination; to avoid such incidence, barrier materials, (e.g. plastic bags), may be required.
- 4.2.4 Pre-qualification sampling
 - 4.2.4.1 During pre-qualification simulation testing on packaging may be required to ensure product and packaging will withstand "real world" load, conditions, handling, environmental exposure (open transport).
 - 4.2.4.2 If testing is required through ASTM or DIN standards, contact the appropriate Husky Global Supply Chain representative.
 - 4.2.4.3 A sample shipment may be required to test and validate that the packaging withstands delivery conditions and to allow Husky to review the packaging.
- 4.2.5 Returnable packaging and/or dunnage
 - 4.2.5.1 Returnable packaging and/or dunnage should be used when it is cost effective or when it is needed to meet specific Husky objectives.
 - 4.2.5.2 Where returnable packaging and/or dunnage is not justifiable or feasible, environmentally friendly materials (recyclable) shall be used.

4.2.6 Expectations

- 4.2.6.1 Parts must arrive at Husky without damage, rust, corrosion, or contamination.
- 4.2.6.2 Husky-owned packaging shall not be used for storage and shipment of non-Husky-owned parts.
- 4.2.6.3 Suppliers are expected to notify Husky immediately in the event that containers are returned to the supplier:
 - with supplied direct materials (parts) inside;
 - not properly identified (e.g. incorrect address);
 - without the full complement of returnable packaging components in the correct proportions (e.g. no lids, or more lids than totes);
 - with trash or other foreign materials inside;
 - not properly prepared for safe transport (e.g. totes are banded or stretch wrapped to the pallet versus being stacked loosely);

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- at a lower return rate than full packs being shipped to Husky; or
- any damage found upon returned.

4.3 Packaging Requirements

- 4.3.1 General requirements
 - 4.3.1.1 Packaging shall be defined and agreed upon prior to the first direct material shipment to Husky.

4.3.2 Alternatives

- 4.3.2.1 Various options (not an exhaustive list) are presented below for the supplier's consideration in order to achieve effective and safe delivery of items. Proposed alternatives are the following:
 - returnable using bulk containers, pallets, and totes that cube-out on standard footprint sized pallets (45" x 48", 30" x 36", or 30" x 32");
 - expendable; or
 - expendable/returnable combination

4.3.3 Requirements

- 4.3.3.1 Pallet-Load Dimensions (Expendable or Returnable) in terms of foot print size and height restrictions (includes pallet) are per the following:
 - FACE WIDTH X DEPTH X Max. Height
 - (1) 48" X 45"X50"
 - (2) 32" X 30"X40"
 - (3) 36" X 30"X40"
 - (4) 1200 mm X 1000 mm 1000 mm
 - (5) 1200 mm X 800 mm 1000 mm
 - (6) 44" X 36" 40"
- 4.3.3.2 Within reason, no material shall extend over the edge of the pallet.

4.3.4 Strapping Options

- 4.3.4.1 The following strapping should be used where appropriate:
 - non-metallic nylon strap
 - heavy duty metallic strap
 - stretch wrap or shrink wrap
 - tape

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- special pallets (must be approved)
- 4.3.5 Corner boards should be used as required to protect package; fiberboard is preferred.
- 4.3.6 Corrugated packaging specifications
 - 4.3.6.1 Corrugated (paper fiber board) packaging material must have strength to adequately withstand transportation and handling rigors from the supplier's shipping dock to Husky's receiving dock. Corrugated material must have adequate ECT or burst test strength to protect the product (see table 1 and 2).

PROPERTIES	CARDBOARD AND CORRUGATED CARDBOARD BOXES
Dimensions	Vary according to area of use. Must be individually adjusted to fit the packaged goods.
Permitted total weights	Manual handling: 20kg or less
	Box must be of sufficient quality to ensure stacking stability and must
Requirements	be shock resistant. Recommended choice of quality standards is
	specified pursuant to DIN 55468.
Stackability	Boxes must be stackable without any modification required. Any
Stackability	affected packaging must otherwise be clearly labeled.
	Direct contact should be avoided between boxes and any parts
	susceptible to corrosion (e.g. using VCI film).
Usage	To avoid damage and any ensuing costs, special care must be taken to
	ensure the correct handling and secure transport of parts within the
	box.
Conditions of uses	Boxes must be dry, intact and damage-free (e.g. crushed, torn,
Conditions of uses	structural cracks).

Table 1: Corrugated Cardboard Box Specifications

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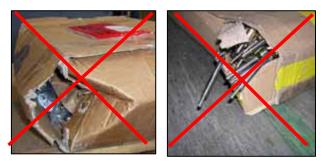


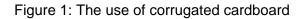
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Examples of Correct Use:



Examples of Incorrect Use:





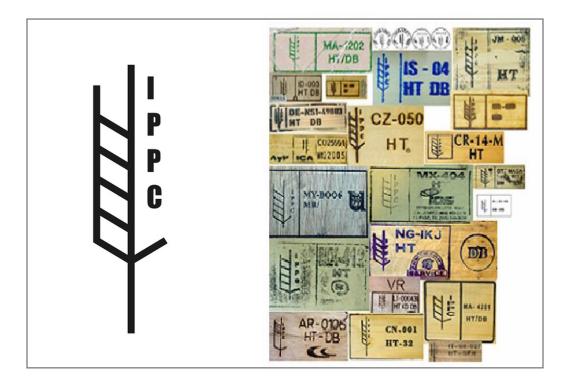
Recommended Box-Strength Guidelines						
Maximum Weight of Contents (Ibs.)	Size Limit of Box (inches) L+W+H	Bursting Test (Ibs. per sq. in.)	Edge Crush Test (ECT) (Ibs. per in. width)			
Sing	Single-Wall Corrugated Containers					
30	75	200	32			
40	75	200	40			
50	85	250	44			
65	95	275	55			
80	105	350	NA			
Double-Wall Corrugated Containers						
60	85	200	48			
80	95	275	51			
100	105	350	61			
120	110	400	71			
140	115	500	82			
150	120	600	NA			

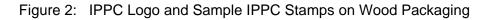
Table 2: Box strength guidelines

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- 4.3.6.2 Corrugated packaging shall <u>not</u> utilize metal staples.
- 4.3.6.3 If stacking exceptions are required, label accordingly: *"DO NOT STACK, STACK ONLY 2 HIGH,"* etc.
- 4.3.7 Weight Limitation
 - 4.3.7.1 Max. Shipping Pack = 2,000 Lbs. (909 Kg) or as uniquely specified (e.g. Gaylord of resin)
 - 4.3.7.2 Max. Sub Pack < 20kg (44 Lbs)
- 4.3.8 Pallet Style/Type
 - 4.3.8.1 All wood pallets shall conform to the National Wood Pallet Container Association voluntary standard for wood pallets (NWPCA). Husky prefers stringer, double deck, non reversible, wood pallets. Stringers for wooden pallets shall have a minimum height of 3½".
 - 4.3.8.2 When possible, pallets should be 4-way entry.
- 4.3.9 Wooden packaging imports into the USA, Canada, Luxembourg or Asia, when applicable, must be free of bark and pests and according to 'International Plant Protection Convention' regulations. Figure 2 shows different IPPC seals confirming wood packing material has been properly treated for pest control and can be used for international shipment.





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- 4.3.10 Small packaging such as plastic bags may be considered to supplement packaging of parts inside totes, cartons, and/or bulk containers. However, when bags are used, they shall be marked with the part label as described in section 4.4.
- 4.3.11 One of the most important properties of a unit load is its stackability. This must guarantee that pallets, etc., can be securely piled on top of each other (stacked) with or without any stacking support (figure 3). Should unit loads not be stackable due to the condition of the packaged good, they must be labeled accordingly.

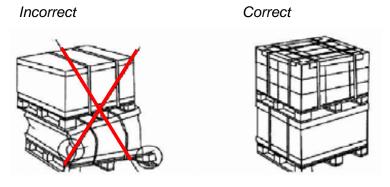


Figure 3: Stacking of pallets

4.3.12 Euro pallets displaying any of the following characteristics may not be reused (figure 4):

- Splintered bottom edge board or top edge board;
- Necessary identification markings missing (DB, EPAL etc.);
- Missing or broken board/sections;
- Carrying capacity no longer guaranteed; or
- Excessively stained.

Bottom Edge Board Missing

Top Edge Board Missing



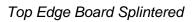




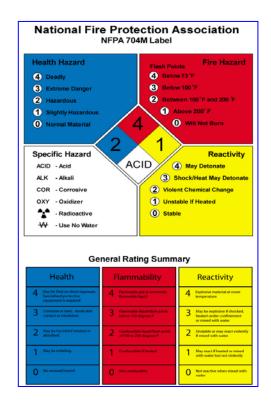
Figure 4: Euro pallets

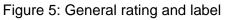
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4.3.13 Prohibited Materials

- 4.3.13.1 Packaging materials must not exceed the cumulative concentration limit of 100 ppm for lead, cadmium, mercury and chromate, as described in the EU Packaging and Packaging Waste Directive (94/62/EG). Furthermore, the supplier must observe the trade-specific list of "prohibited ingredients" (black list) and the "modifiable substances" list (grey list) in all future orders, parts production and packaging selection.
- 4.3.13.2 Hazardous materials are substances that pose an actual danger to humans, animals, the environment or public safety and order when being transported through the public domain. Husky does not allow the delivery of hazardous materials unless pre-authorized by Husky. If applicable, on delivery of hazardous materials, it is essential that all local regulatory provisions concerning the marking and transportation of hazardous materials are observed. Husky must be supplied with **M**aterial **S**afety **D**ata **S**heets <u>prior</u> to delivery without exception. Refer to "Husky Global Banned and Restricted Chemical List" through the Husky Corporate EHS team for the most updated information on restricted hazardous materials/chemicals list. Labeling to be carried out according to the internationally recognized Hazardous Materials and Transportation of Dangerous Goods Code. See figures 5 and 6.





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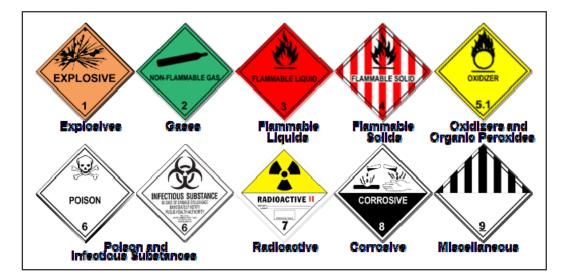


Figure 6: International hazardous material labeling

4.3.14 If a packaged good requires particular package handling, this must be clearly and visibly indicated on the outside of the packaging. The internationally standardized handling symbols for packages are specified in ISO R780 and DIN 55402. These self-explanatory symbols must not be omitted under any circumstance as they serve to avoid language-barrier issues arising from international transport. The most important symbols are summarized in figure 7.



Figure 7: Package Handling Markings (DIN 55402 and ISO R780 standards)

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- 4.3.15 Packaging accessories are used to ensure that all packaging materials are completely sealed and to increase package strength therefore offering greater protection to packaged good. Auxiliary packaging materials are divided into packaging accessories, padding and anti-corrosion packaging. See table 3 as an example of accessories used along with figure 7 which gives plastics identification codes accepted by Husky.
- 4.3.16 All one-way packaging is produced using environmentally friendly materials that are globally recognized as recyclable substances. The use of compounds and loose filler materials, such as packaging chips, is to be kept to a minimum. Husky guiding principals are referenced in table 4. The following considerations should be taken in account when dealing with packaging:
 - Avoidance: Packaging to be limited to the absolute minimum.
 - Reduction of diversity: The supplier should use as few as possible different types of one-way packaging material in order to reduce the recycle handling. No "exotic" materials.
 - Recycling: Environmental recycling must be possible for all materials used with both returnable and one-way packaging.

Packaging Accessories	Padding	Anti-Corrosion Packaging
Packaging accessories are used to ensure safe transport and to protect external packaging etc. Examples of packaging accessories include pallet frames, stretch wrap, edge guards, shrink wrap etc.	Padding is used to cushion and secure the packaged good within the packaging, e.g. packaging paper, foam, bubble wrap etc.	

Table 3: Packaging accessories illustration

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Figure 7: Plastics Identification codes – Accepted by Husky

Material	Permitted Materials	Prohibited Materials
Compounds	N/A	Compounds are not permitted
General plastics • one-way • reusable	PE, PP, PS, PET labeling subject to DIN6120 PE, PP, PET, ABS labeling subject to DIN6120	PVC, PC, Styrofoam PVC, PC, Styrofoam
Plastic packaging components: Film, Bags and sacks, Protective/insulating caps, Thermoformed insert, Foam	PE, PP, PS, PET, ABS	N/A
Paper board and paper	Identification and management must comply with RESY.	Paper with water-insoluble layer (e.g. wax, paraffin, bitumen, oil, masking tape)
Strapping	PP, PET, Nylon, Steel Strapping	Polyamide tape, Polyester tape, Rope, Wire
Anti-corrosion paper	Only VCI paper verified as recyclable with paper/cardboard	Incompatible waterproof or soaked paper (e.g. bitumen, oil and wax paper)
Wood	In accordance with IPPC standard, high-density fiberboard sheets/pallets	Waterproof, varnished, coated wood; wood shavings
Filler materials	Corrugated cardboard, paper, foam compound. Styrofoam chips/peanuts should be kept to a minimum and is not preferred.	chips (plant-based); or part- adjusted block

Table 4: Permitted and prohibited recyclable materials at Husky

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4.4 Labeling requirements

- 4.4.1 General specifications
 - 4.4.1.1 The quality of the information on labels is essential. Bar code labels are preferred and used to eliminate opportunity for error. Errors made because of label deficiency are serious in nature (bar code print quality must pass verification per ANSI guidelines).
 - 4.4.1.2 Card holders are recommended to contain and protect labels in conjunction with returnable packaging. Adhesive-backed labels shall be applied directly to placards. All labels applied to returnable packaging require that label stock is polyester material or equivalent and the adhesive is classified as a "removable" type.
 - 4.4.1.3 Label Size: Maximum label size is 5 cm (2.0 inches) high X 10 cm (4.0 inches) wide.
 - 4.4.1.4 Label material should not degrade at room temperature storage and must be weather resistant when applicable.
 - 4.4.1.5 The label must be capable of being removed without tearing; paper is not preferred on returnable packaging.
 - 4.4.1.6 Each container and/or sub package shall be labeled, such labels must adhere to package substrate and application is wrinkle-free.
 - 4.4.1.7 If processes or packaging systems do not allow for un-packing parts to access all containers and/or sub-packages, the supplier may supply enough labels in the box for Husky personnel to properly label every tube as it is received by Husky.
 - 4.4.1.8 Husky's label color required is white with black printing.
 - 4.4.1.9 Adhesive types can be pressure sensitive or dry gummed as long as adherence to the package substrate is assured and application is wrinkle-free.
 - 4.4.1.10 The adhesive must not leave a residue on parts (if applied on parts) after the label is removed if applicable.
 - 4.4.1.11 If possible, supplier should show human readable zeroes (Ø) with a diagonal slash to differentiate them from alphabetic O's. If this is not supported by the selected font, the supplier should ensure that there is a distinct difference between alpha and numeric characters.
 - 4.4.1.12 The label may contain barcode (Code 39, Code 128 or other format approved by Husky) and human readable characters (Font size shall be 14 or larger on all required fields) as defined.

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4.4.2 Labeling

- 4.4.2.1 The part ID labels shall be applied to each container or package. This label shall contain the following information in this order:
 - Supplier Packing List Number;
 - Purchase Order Number;
 - Husky Part Number;
 - PO Line Item Number;
 - Manufacturer's Name;
 - Manufacturer's Part Number (Shall match PO, Supplier can not add additional characters without Husky's approval);
 - Lot Code / Date Code;
 - Material Expiration Date (MMDDYYYY), if applicable;
 - Shipment Qty;
 - A blank space approx .75" X .75" for use during Husky receiving; and
 - Where applicable, all custom parts should have "Project Number" shown on packing list (labels).
- 4.4.2.2 Mixed items package label shall be applied to each outer box for each shipment. If shipment is not mixed, the Part ID label shall be placed on the single outside box. This label shall contain the following information in this order (see sample format below):
 - Supplier Packing List Number;
 - PO Number; and
 - "MIXED LOAD" printed on label in large font (45 pt min.).
- 4.4.3 Any pallet that contains the same product shall be labeled with a Pallet ID rather than with a Package label. This is to permit a Receiver to identify material stored in elevated pallet racking without having to remove the pallet. Each box on the pallet shall still require a part ID label.
 - 4.4.3.1 The pallet marker shall be no smaller than 8.5" X 11" (landscape).
 - 4.4.3.2 Human readable font shall be no smaller than 65 pt (Husky Part Number minimum 80 pt font).
 - 4.4.3.3 This pallet marker shall be secured to each pallet and visible from every side (4 sheets required).

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4.4.4 Packing lists labeled as "Partial Shipment" are not acceptable. Packing lists for partial shipments must only detail items actually shipped.

4.5 Anti-corrosion material protection

- 4.5.1 Provided that no other agreement has been reached, the supplier must implement the anti-corrosion measures required by Husky.
- 4.5.2 Only preservation agents permitted by Husky Corporate Environment, Health & Safety approved chemical list may be used.
- 4.5.3 Parts must be protected to prevent rust by utilizing rust inhibitors complying with Husky's health and safety regulations and must not be classified as hazardous material.
- 4.5.4 WHMIS information must be on the exterior of packaging; any deviation from the required rust inhibitors listed below, approval must be obtained during part qualification. The table 5 below provides a list of rust inhibitors approved by Husky.

Shipments	Tooling (Hot Runners and Molds)	Machines
Local	LPS-3	Cortec VCI 389
Overseas	LPS-2, LPS-3 and anti-corrosion paper	Cortec VCI 369 and anti-corrosion paper

Table 5: Required rust inhibitors

- 4.5.5 All coatings must <u>not</u> be classified as hazardous material unless pre authorization is given by Husky.
- 4.5.6 When applicable, hazardous material information must be on exterior of packaging when used as per Husky policy and local environmental health and safety regulations such as, OHSA (United States & Ontario, Canada) and EU-OSHA (Europe & South America), etc.

4.6 Weight restrictions

- 4.6.1 The permitted weight limit for packages and load carriers may only be exceeded if technical conditions render adherence to the permitted weight limit impossible.
- 4.6.2 The total weight must be clearly and visibly marked on the package or load carrier.
- 4.6.3 In order to ensure a minimum risk of injury to the employees of Husky and its suppliers, the (gross) permitted weight limit for a package of up to 14kg (30lbs) must not be exceeded.

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4.6.4 Any packages weighing over 14kg (30lbs) must always be delivered on load carriers (pallets, skids) designed specifically for mechanical lifting assistance.

4.7 Security of goods and Intellectual property

- 4.7.1 Securing intellectual property, supplies, parts or other goods is a vital component of packaging requirement and part of Husky Supplier Confidentiality and Code of Conduct agreements.
- 4.7.2 All business, technical and financial information that goes beyond basic publicly-available facts about Husky is considered sensitive.
- 4.7.3 Security measures must be in place to ensure the integrity and security of processes relevant to the transportation, handling and storage of cargo from suppliers.
- 4.7.4 Security and safeguard of all Husky property is the sole responsibility of a supplier until it has been formally received on Husky property by Husky personnel in the field and /or at designated Husky preauthorized locations.
- 4.7.5 Technical drawings or other engineering specific information must not be included in or on any packaging from suppliers.
- 4.7.6 Inspection reports that include technical drawings or engineering specific information must be submitted by email.
- 4.7.7 Only the total value of goods should be included on shipping labels, when appropriate, for international shipping.
- 4.7.8 The information on the purchase order pricing agreements or other non-shipping relevant cost information shall not be part of the shipment.

5. Disclaimer

This packaging information is provided by Husky worldwide as a guide only. However, suppliers shall request authorization from Husky GSC representative (SQE or CM) upon "modifications" of existing packaging or "new" packaging proposal following part qualification or previously agreed packaging. It does not provide complete guidance for all packaged items under all situations and/or regulatory requirements. Husky worldwide makes no assurances that by following the advice in this document suppliers' parcels will not be damaged, stolen or otherwise disrupted during transit. International border crossing shipments may include destructive inspection, delays, quarantine or other customs-related activity even when sent via Husky recommended shipping services. The adequate packaging, adherence to current regulatory requirements by region and safe guarding of items for transit to Husky is solely the responsibility of the sender.

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6. **Document control**

Revisions to this document shall be done and authorized exclusively by Global supply Chain.

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