Why Do Industry Leaders Choose Alphanumeric Identifiers?

Aerospace
Automotive
Aviation
Electronics
Healthcare
Shipping
Telecommunications
and more...

Auto Identification technology has been widely implemented as a mechanism for streamlining business processes in every major industry. The automation of product identification, ordering and inventory has facilitated efficiency and cost savings, and has provided a system safeguard against human error. While the purpose of an auto-ID symbol is not obvious to the average consumer, these symbols are critically important in the supply chain that delivers products to them.

The alphanumeric Health Industry Bar Code (HIBC) and Auto-ID Standards were developed when industry executives and trade associations concluded that the pre-existing all-numeric bar code standards were inadequate for the specific applications and needs of a healthcare environment. These all-numeric data structures were based upon the generic needs of retailers who did not consider patient/consumer safety concerns.

In the last decade the U.S. Food and Drug Administration (FDA) highlighted the importance of alphanumeric identifiers in their final rules on Bar Code Label Requirements for Human Drug Products in 2004, and in requirements for Unique Device Identifiers (UDIs) for medical devices in 2013. In 2004, the FDA stated that "We decided to give firms the option of using HIBCC data formats because we also cannot preclude the possibility that some firms may prefer using alphanumeric codes formats, which HIBCC uses". And in 2013, the FDA designated HIBCC as an Issuing Agency for its UDI regulation of medical devices.

Other industries with concerns for consumer safety and satisfaction - such as aerospace, automotive, telecommunications, electronics, shipping and aviation - have also chosen alphanumeric identifiers for their product and process labeling. The flexibility and accuracy of alphanumeric auto-ID symbols ensure the safest and most efficient delivery of their goods and services.

What follows is information highlighting the critical features of alphanumeric data structures and their use in major industries.

Alphanumeric Identifiers...

Allow for Literal Encoding of Product Data

The use of alpha characters allows labelers to directly encode essential data such as names, locations and product codes.

All-numeric data structures are restricted by non-literal symbologies.

Shipping and aviation industries encode location data such as a city or state name into the auto-ID symbol applied to the packages and luggage they are transporting. This precise identification ensures accuracy and a timely arrival of the customer's goods.

Implantable medical devices are labeled with individual serial numbers that are frequently alphanumeric. This identification data should be encoded in its original form to ensure the safest and most accurate identification of these items.

Shipping Label
Source: United Parcel Service (UPS)

Alphanumeric Identifiers...

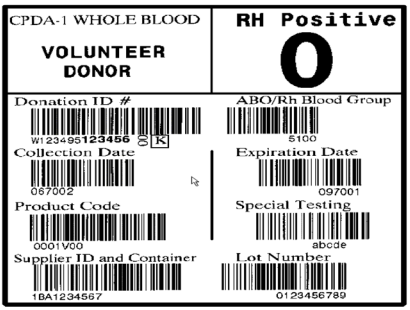
Eliminate Dangerous Cross-Referencing

Literal encryption of product data eliminates the need for translation of alpha characters into numeric signifiers.

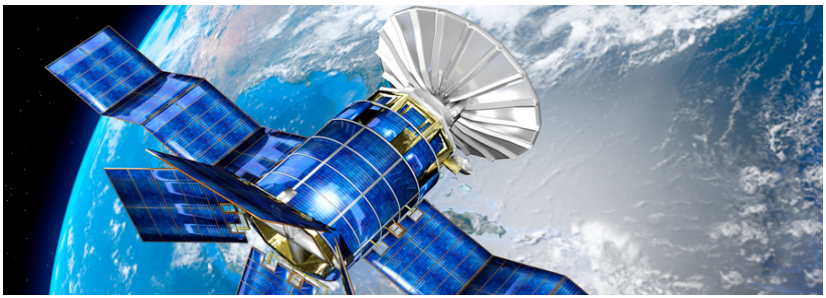
The inherent limitations of all-numeric data structures often force labelers to modify their existing product data. This process necessitates the cross-referencing of original-to-modified data, greatly increasing the risk of identification errors.

Aerospace and automotive industries must label parts for quality control purposes. Cross-referencing introduces a level of error unacceptable for the identification of critical parts such as air bags and brakes.

Blood products are labeled with blood type and harvest location information. Due to the risks involved with administration of either mismatched or contaminated blood, precise and unaltered identification of this data is essential.



ISBT 128 Label
Source: International Council for Commonality in Blood Banking Automation (ICCBBA)



Alphanumeric Identifiers...

Provide a Larger Set of Identifiers

The ten numeric characters (0-9) and twenty-six alpha characters (A-Z) of an alphanumeric data structure combine to provide a greater set of possible identifiers.

All-numeric data structures are limited to the total combinations of ten (0-9) characters.

Electronic and telecommunication devices are constructed from thousands of individual parts that must be distinctively identified. This requires an enormous set of potential identifiers in order to label each part uniquely.

The Electronic Industries Alliance (formerly Electronic Industries Association) was organized by trade associations for electronics manufacturers to standardize the labeling of electronic equipment and ensure compatibility. The EIA developed alphanumeric auto-ID standards accredited by ANSI, that are still used today throughout the electronics industry.

There are tens of thousands of **healthcare products**, each of which may require identification down to the unit-of-use level for safe delivery practices. Single unit labeling thus necessitates millions of individual and unique identifiers.

Electronic Industries Alliance

Source: www.qed.org

Alphanumeric Identifiers...

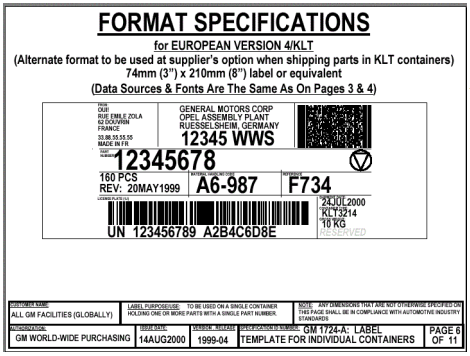
Reduce the Risk of Duplication

The greater number of possible combinations enabled by an alphanumeric data structure significantly reduces the risk of duplicate identifiers.

The restrictive nature of all-numeric combinations cannot provide an adequate number of identifiers to avoid duplication.

Aerospace and automotive industries uniquely label parts so that in the event of an accident, a defective component can be quickly identified. Duplications of identifiers hinder this process and can cause the misidentification of problem parts.

Duplications can have profound consequences in a hospital setting. **Medical products**, if improperly identified during administration, can result in serious harm or even death.



Automotive Industry Action Group
AIAG - Automotive Industry Action Group Standard for part identification
B-4 Source: General Motors Corp

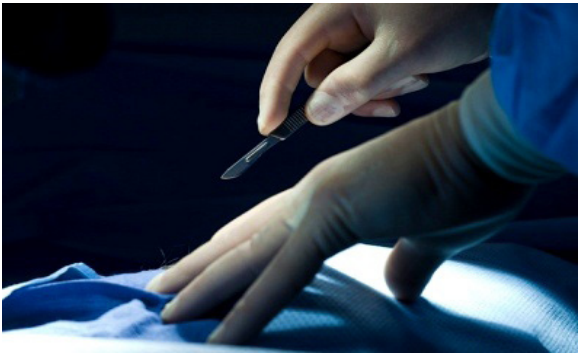
Alphanumeric Identifers...

Facilitate Product Tracking and Recall

The flexibility of alphanumeric data structures allows for placement of precise product information on the product or label. Precise identification is essential for accurate and efficient product tracking and can be critical in the event of a product recall due to failure or defect.

All-numeric data structures are inflexible and can require modification of product information. This complexity can lead to inaccuracies in product identification and inefficiencies in the tracking and recall process.

By their nature, **healthcare products** must be monitored carefully. Efficient tracking and recall of defective medical devices or contaminated blood products is critical to the safety and well-being of patients.



Air Transport Association (ATA)
Part Marking Symbols
Source: ATA Spec 2000 Rev. 5

MFR 2D671
SER ABC333-001

PNR F100200300400AP

As an ANSI-accredited organization, HIBCC follows a comprehensive set of consensus requirements that govern the standards development process. The ANSI process serves to protect public interest, maintain an equitable decision making environment, and ensure that all affected parties have an opportunity to participate. HIBCC is also accredited by CEN, a committee representing the National Standardization Bodies of 33 European countries. CEN's standards development process places stringent requirements on the principles of consensus, transparency, and technical coherence.

HIBCC achieves a balanced industry perspective through the Executive and Technical Committee participation from across the spectrum of the heath care supply chain. We were initially founded by five major national healthcare associations that recommend individuals from among their member companies to participate in our governance processes.

Various HIBCC initiatives include:

- We are a standards development organization (SDO) that is accredited with the American National Standards Institute (ANSI).
- We are Accredited by the European Committee for Standardization (CEN).
- HIBCC standards are recognized by the International Organization for Standardization (ISO).
- HIBCC supports its labelers through an international network of affialiated offices.
- HIBCC maintains the Health Industry Number (HIN) system, which uniquely identifies more than 2 million North American human and animal healthcare locations.

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