Suggested Environmental Considerations for Reusable Positioners

Please consider the following environmental questions for the RFP/RFI for positioners. These questions also apply to mattresses, mattress overlays (egg crates, alternating pressure pads, low air loss, static air overlays), therapeutic surfaces, critical care beds, low beds, med/surg beds, and bariatric beds. Some of the Standardized Environmental Questions for Medical Products, v1.0, apply and offer guidance on key attributes. Additional environmental considerations are provided that are specific to this category.

If you have any questions or comments, email gsc@practicegreenhealth.org

#	Question	Preferred Response	Definition	Rationale
Standardized Environmental Questions for Medical Products, Version 1.0				
Natural Resources	1. For non-patient contact devices only, does this product contain postconsumer recycled content (excluding steel)? (Yes/No)	Yes, highest %	Postconsumer recycled content material is a material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item.[i] Basically, it is the material collected from recycling programs. It is calculated as a percentage of total weight of the product. Steel is excluded from consideration as it commonly contains recycled content. This does not include preconsumer (sometimes referred to as postindustrial) recycled content which are recovered materials obtained from manufacturers.[ii]	Buying recycled-content products ensures that the materials collected in recycling programs will be used again in the manufacture of new products. According to EPA, recommending postconsumer recycled content levels for items will have the most positive impact on reducing the amount of solid waste requiring disposal.[iii] Purchasers should prefer products with the highest postconsumer recycled content that also meet other considerations. Use of postconsumer recycled content supports closing the loop in the recycling process, and, based on EPA's ReCon Tool, helps avoid generating greenhouse gas emissions.

	2.	Is this product recyclable? (Yes/No)	Yes	Recyclable, according to the FTC Green Guides, means the product can be collected, separated, or otherwise recovered from the solid waste stream for reuse, or in the manufacture or assembly of another package or product, through an established recycling program. Any claims of recyclability indicates the supplier can demonstrate that at least 60% of the hospitals in the U.S., or in the product distribution area, have access to an established recycling program for this item, or there is an existing take-back program by the vendor of the manufacturer that has been in operation at least one year and covers the indicated percentage of hospitals and will recycle the product.	Recyclable products, those that are recyclable in communities in the U.S., reduce materials going to the waste stream and their associated costs. Although FTC has not finalized definitions to prove this claim, we are utilizing the FTC draft definition for 'substantial majority' to mean at least 60% and adding what it means to the health care community to ensure the needs of facilities who strive to divert materials from their waste stream.
	3.	Does the product's primary packaging contain postconsumer recycled content? (Yes/No) If yes, what percentage?	Yes, highest %	The primary packaging surrounds the product. For example the paper wrap surrounding a roll of toilet paper is primary packaging. (Secondary packaging surrounds a group of products, such as the box containing rolls of toilet paper.) Postconsumer recycled content material is a material or finished product that has served its intended use and has been diverted or recovered from waste destined for disposal, having completed its life as a consumer item.[iv] Basically, it is the material collected from recycling programs. It is calculated as a percentage of the total weight of the product.	Buying recycled-content products ensures that the materials collected in recycling programs will be used again in the manufacture of new products. According to EPA, recommending postconsumer recycled content levels for items will have the most positive impact on reducing the amount of solid waste requiring disposal.[v] Purchasers should prefer products with the highest postconsumer recycled content that also meet other considerations. Use of postconsumer recycled content is fundamental to closing the loop in the recycling process, using fewer natural resources, and based on EPA's ReCon Tool, can reduce greenhouse gas emissions. There are exceptions to the use of postconsumer recycled content in sterile barrier packaging (ISO 11607-1).

	4.	Is this product packaged without polystyrene? (Yes/No)	Yes	Polystyrene (CAS 9003-53-6) is a plastic polymer from the monomer styrene. It comes in many forms: sheet, expanded or extruded foam, or as oriented polystyrene. What is commonly known as Styrofoam™ refers only to the extruded form of polystyrene. Packaging refers to all materials (primary, secondary, etc) used to transport and protect a product from damage. Alternatives to polystyrene packaging are available.	Also referred to as 'PS' with the SPI (Society of the Plastics Industry) resin code 6, polystyrene is difficult for hospitals to recycle and there are alternatives. Polystyrene is made with styrene.[vi] The International Agency for Research on Cancer (IARC) classifies styrene as a possible carcinogen.[vii] Foam blowing agents (called hydrochlorofluorocarbons, HCFCs) used to make polystyrene foam are compounds that have an ozone depletion potential[viii].
	5.	Is this product sold as a multi-use product or device (not single patient use)? (Yes/No)	Yes, with exceptions	A multi-use product or device is sold as a product that can be used on more than one patient. In Sec 201 [21 U.S.C. 321], the FDA defines the term "single-use device" to mean a device that is intended for one use, or on a single patient during a single procedure. This question does not include products that can be reprocessed.	Products that can be used more than once reduce waste (and associated costs) and conserve natural resources. There are case studies that demonstrate the cost and environmental benefits of multi-use devices. There are exceptions; not all medical products should be multi-use.
Chemicals	6.	Is this product free of intentionally added [1] polyvinyl chloride (PVC)? (Yes/No)	Yes	Polyvinyl chloride (PVC) shall be defined as a plastic polymer used in a wide array of products. It is the third most widely produced plastic. Intentionally added means a substance is deliberately added in the production of the product.	Production and incineration of PVC releases dioxins and other harmful chemicals. Dioxins are widely distributed throughout the environment in low concentrations and are persistent, bioaccumulative and toxic (PBT). Dioxins are potent toxicants with many health impacts even at low exposure levels.

	7.	Is this product free of intentionally added phthalates: DEHP, BBP, DnHP, DIDP, and DBP? (Yes/No) If no, please specify the phthalate(s)	Yes	Phthalates are esters of phthalic acid mainly used as plasticizers (substances added to plastics to increase their flexibility, transparency, durability, and longevity). They are used primarily to soften polyvinyl chloride (PVC). Di-2-ethyl hexyl phthalate (DEHP) CAS 117-81-7, Benzylbutylphthalate (BBP) CAS 85-68-7, Di-n-hexyl phthalate (DnHP) CAS 84-75-3, Di-isodecyl phthalate (DIDP) CAS 68515-49-1 or 26761-40-0, Dibutyl phthalate (DBP) CAS 84-74-2	People can be exposed through the use of products containing these chemicals. In 2002, the FDA issued a Public Health Notification for PVC devices containing DEHP. DEHP is also listed as a carcinogen on the Prop 65 list. The National Research Council has also noted the importance of looking at cumulative exposure from multiple phthalates. These five phthalates are listed as reproductive toxicants by Prop 65.
	8	Does this product contain less than 1000 ppm halogenated organic flame retardants by weight of homogenous material? (Yes/No)	Yes	Halogenated organic flame retardants are intended to inhibit ignition and the spread of flames. Halogenated chemicals are chemicals that contain bromine, chlorine, fluorine or iodine bonded to a carbon atom. Homogeneous means uniform composition throughout, such as individual types of plastics or paper. Homogenous material, as defined by RoHS, is a unit that cannot be mechanically disjointed into single materials, or any material that is not mechanically divisible (disassembled, cut or ground) into separate material constituents. Mechanically disjointed means the materials can be, in principle, separated by mechanical actions such as unscrewing, cutting, crushing, grinding and abrasive processes.[ix] Guidance for suppliers on testing is available.	Halogenated organic flame retardants and/or their breakdown products tend to be persistent bioaccumulative and toxic (PBT) in the environment. They are widely found in the environment and in humans with Americans having some of the highest levels of them in their bodies. Some halogenated organic flame retardants are carcinogenic. These compounds are used in foams (for furniture and mattresses), textiles, paints and coatings, electronics, and plastics in health care. Alternatives exist that reduce the concern for environmental and human health effects. The European Union has a ban on some brominated flame retardants. In Europe, the Restriction of Hazardous Substances Directive (RoHS) restricts the use of PBDE's and PBB's in electronic equipment.

	9	Was this product not made with natural rubber latex? (Yes/No)	Yes	Latex is natural rubber latex that comes from a liquid found in tropical rubber trees. Intentionally added means a substance is deliberately added in the production of the product.	Liquid latex is processed to make many medical and dental supplies, including gloves, blood pressure cuffs, urinary catheters, dental dams and material used to fill root canals, as well as tourniquets and equipment for resuscitation. Non-latex substitutes (synthetic latex) can be found for all of these latex-containing items. The protein in rubber can cause an allergic reaction in some people. This reaction can range from sneezing to anaphylactic shock, which is a serious condition that requires immediate medical attention.
	10	Is this product free of carcinogens or reproductive toxicants (above Prop 65 Safe harbor levels for chemicals where a safe harbor level is specified), as listed under the California Safe Drinking Water and Toxic Enforcement Act of 1986, Proposition 65? (Yes/No)	Yes	California's Prop 65, The Safe Drinking Water and Toxic Enforcement Act, enacted in 1986, requires the state to publish a list of chemicals known to cause cancer or reproductive harm. Prop 65 applies to suppliers who sell products in the state if their products exceed safe harbor levels established in Prop 65. Safe harbor levels establish thresholds for no significant risk levels (NSRLs) for carcinogens and maximum allowable dose levels (MADLs) for chemicals that cause reproductive toxicity.	The California Proposition 65 list is an authoritative government list of carcinogens and reproductive toxicants that health care facilities may wish to avoid. All suppliers who do business in California must comply with this law. As such, this law already applies to many suppliers in the health care sector. Since this list is updated at least once a year, suppliers must provide up-to-date information for procurement contracts.
Additional Considerations					

	11	Is this product and its components free of heavy metals, including lead, cadmium, and antimony at less than 100ppm and hexavalent chromium less than 1000ppm? (Yes/No)	Yes	Heavy metals negatively impact human health. Cadmium is extremely toxic; hexavalent chromium is carcinogenic. Exposure to mercury results in permanent nervous system and kidney damage. The European Union's Restriction of Hazardous Substances Directive restricts mercury and cadmium at no more than 100ppm, and hexavalent chromium and lead at 1000ppm. To verify this attribute, provide a test result under IEC 62321:2008. IEC 62321:2008, which is an International Standard, specifies the determination of the levels of lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr(VI)) contained in inorganic and organic compounds, and two types of brominated flame retardants, polybrominated biphenyls (PBB) and polybrominated diphenyl ethers (PBDE) contained in electrotechnical products.	Heavy metals are persistent bioaccumulative and toxic. Heavy metals may enter the human body through food, water, air, or absorption through the skin when they come in contact with humans in agriculture and in manufacturing, pharmaceutical, industrial, or residential settings. They may build up in biological systems and become a significant health hazard. Cadmium is an extremely toxic metal.[xi] Lead accounts for most of the cases of pediatric heavy metal poisoning (Roberts 1999)[xii].

	12	Is this product certified by a third party to meet VOC emission limits using criteria based on the Standard Method for Testing and Evaluation of Volatile Organic Compound Emissions from Indoor Sources using Environmental Chambers, or CDPH/EHLB/Standard Method V1.1 (Feb 2010) (otherwise known as the California 01350 Standard)? (Yes/No/NA)	Yes	Strict VOC and formaldehyde emission levels are addressed in this standard. Volatile organic compounds are emitted as gases from certain solids or liquids. VOCs include a variety of chemicals, some of which may have short- and long-term adverse health effects. Concentrations of many VOCs are consistently higher indoors (up to ten times higher) than outdoors. Applicable certifications and levels include: GREENGUARD Gold, SCS Indoor Advantage (for BIFMA Credit 7.6.1) and SCS Indoor Advantage Gold (for BIFMA Credits 7.6.1 and 7.6.2), ANSI/BIFMA LEVEL Furniture Sustainability Standard at level 1,2 or 3, with at least one point score for Sections 7.6, Cradle to Cradle Gold or Platinum, or SMaRT Certified with at least one point score under Public Health and Environment (PHE) standards 3-2 and 3-3.	Products emitting volatile organic compounds (VOCs) can irritate the respiratory tract and contribute to respiratory ailments such as asthma. Some chemicals, such as formaldehyde, can also react with other chemicals to form pollutants such as ground level ozone and smog. Formaldehyde is a common indoor air contaminant because of its use in furniture, cabinets, countertops, insulation, wallpaper, paints, and paneling. The International Agency for Research on Cancer (IARC) classified formaldehyde as a human carcinogen in 2006. More recently, the National Toxicology Program, an interagency program of the Department of Health and Human Services, named formaldehyde as a known human carcinogen in its 12th Report on Carcinogens (NTP 2011). For a link to certifiers and certified products, see ANSI/BIFMA e3, http://levelcertified.org/thirdparty/ (Note: This link will not tell you who has achieved Sections 7.6.1 and 7.6.2. Suppliers could provide a copy of the ANSI/BIFMAe3 scorecard as verification with at least one point for 7.6). GREENGUARD Gold, http://productguide.ulenvironment.com/SearchResults.aspx?CertificationID=2. SCS Indoor Advantage Gold, http://www.scsglobalservices.com/certified-green-products-guide, http://www.c2ccertified.org/products/registry, Cradle to Cradle Gold or Platinum, http://www.c2ccertified.org/products/registry or SMaRT certified (Suppliers should provide a copy of the scorecard with at least one point for PHE 3-2 and 3-3), http://mts.sustainableproducts.com/SMaRT%20List%2011-2012.pdf.

	13	Is this product free of intentionally added perfluorinated compounds? (Yes/No)	Yes	PFCs are man-made chemicals composed of a strong carbon-fluorine chain. PFCs are manufactured because of their specific physical and chemical properties. Their unique properties of repelling both water and oil has led to their use as coatings for carpet protection, textile protection, leather protection, and paper and board protection.	Research has revealed that some PFCs have the potential to bioaccumulate (build up) in the blood and liver of living organisms. Furthermore, studies on toxicity have shown that two PFCs, which are known contaminants of the global environment, namely perfluorooctane sulphonate (PFOS) and perfluorooctanoic acid (PFOA), exert many adverse effects on laboratory mammals and aquatic organisms. PFCs are now ubiquitous global contaminants. These chemicals have been detected in indoor and outdoor air, in rivers, lakes and groundwater, in wastewater treatment effluent, in landfills and in the marine environment. PFCs have also been found in the body tissues of many different living organisms throughout the world including humans.[xiii]
	14	Is this product free of intentionally added nanomaterials? (Yes/No)	Yes	Engineered nanomaterials are materials designed at the molecular (nanometre) level to take advantage of their small size and novel properties which are generally not seen in their conventional, bulk counterparts. Nanomaterials have extremely small size as their defining characteristic, although there is as yet no agreed national or international definition for nanomaterials[xiv]	A recent report found EPA does not currently have sufficient information or processes to effectively manage the human health and environmental risks of nanomaterials.[xv] With some 600 commercial products reportedly on the market now [5] and more under development, nanomaterials are entering municipal wastewater treatment plants. That realization has heightened concerns about the effects of these materials on treatment plants and the potential for release of free nanoscale materials into the environment. No comprehensive studies on the problem have yet been published.[xvi]

	15	Is this product free of intentionally added antimicrobials? (Yes/No)	Yes	Antimicrobial products kill or slow the spread of microorganisms. Microorganisms include bacteria, viruses, protozoans, and fungi such as mold and mildew. The U.S. Environmental Protection Agency (EPA) regulates antimicrobial products as pesticides, and the U.S. Food and Drug Administration (FDA) regulates antimicrobial products as drugs/antiseptics. As pesticides, antimicrobial products are used on objects such as countertops, toys, grocery carts, and hospital equipment. As antiseptics, antimicrobial products are used to treat or prevent diseases on people, pets, and other living things.[2]	Few hospital mattresses may currently meet this criterion. However, a review of current scientific literature reveals no evidence that environmental surface finishes or fabrics containing antimicrobials assist in preventing infections.[xvii]

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[1] Intentionally added shall mean the act of deliberately utilizing a material in the formation of a component where its continued presence is desired to provide a specific characteristic, appearance, or quality.

[i] Glossary, Comprehensive Procurement Guidelines, U.S. Environmental Protection Agency, http://www.epa.gov/epawaste/conserve/tools/cpg/glossary.htm viewed September 2011

[ii] Reusable Vocabulary, U.S. EPA, http://www.epa.gov/osw/wycd/catbook/you.htm viewed September, 2011

[iii] Background Document for the Final Comprehensive Procurement Guideline (CPG) III and Final Recovered Materials Advisory Notice (RMAN) III, U.S. EPA, September 1999, EPA530-R-00-002

[iv] Glossary, Comprehensive Procurement Guidelines, U.S. Environmental Protection Agency, http://www.epa.gov/epawaste/conserve/tools/cpg/glossary.htm viewed September 2011

[v] Background Document for the Final Comprehensive Procurement Guideline (CPG) III and Final Recovered Materials Advisory Notice (RMAN) III, U.S. EPA, September 1999, EPA530-R-00-002

[vi] U.S. Environmental Protection Agency, "Air Toxics- Styrene," http://www.epa.gov/ttnatw01/hlthef/styrene.html, website viewed June 2011

[vii] Ibid

[viii] *Phaseout of HCFC* s, Ozone Layer Depletion, U.S. EPA, http://www.epa.gov/ozone/title6/phaseout/classtwo.html viewed September 2011

[ix] RoHS Producer Support Booklet, National Measurement Office, 2010, pg 6, http://www.bis.gov.uk/assets/bispartners/nmo/docs/rohs/support-literature/producer-support-booklet.pdf

[x] EPA: Information for Health Care Providers, http://www.epa.gov/hg/healthcare.htm#facilities, viewed August 30, 2011

[xi] OSHA, http://www.osha.gov/SLTC/metalsheavy/index.html

[xii] http://www.lef.org/protocols/prtcl-156.shtml#comm

[xiii] Allsopp, M., Santillo, D., Walters, A. & Johnston, P., Perfluorinated Compounds: An Emerging Concern, University of Exeter, April 2005, p5.

[xiv] "*Nanomaterials* ," NICNAS Information Sheet, Australian Government, September 2006, http://www.nicnas.gov.au/publications/information_sheets/general_information_sheets/nis_nanomaterials_pdf.pdf

[xv] EPA Needs to Manage Nanomaterial Risks More Effectively, U.S. EPA Office of Inspector General, Report No.12 P-0162, December 29, 2011, p.3.

[xvi] Sellers, K., Bergeson, L., Nanomaterials Down the Drain: Perception versus Reality, poster by Arcadis and Bergeson & Campbell, P.C..

[xvii] Thomas Cooper from Erica Stewart, memo on Kaiser Permanente's Antimicrobial Position, December 1, 2006, Kaiser Permanente, from Kaiser Permanente.