CHEMICAL ENGINEERING

UPCOMING FEATURES

SEPTEMBER 2011 | AD CLOSE: AUGUST 3, 2011

THE BEST READ AND ONLY GLOBAL PUBLICATION IN THE CHEMICAL PROCESS INDUSTRIES

FEATURE REPORTS

Air Movers for Dilute Phase Pneumatic Conveying Systems

Summary: There are many types of air movers, and each has its own unique application to pneumatic conveying. This article will present best practices for selecting and operating air movers for pneumatic conveying systems.

Related equipment and services: Pneumatic conveyors and peripheral systems, especially fans, blowers and compressors; also solids handling equipment in general

Specifying Elastomer Seals for Chemical Applications

Summary: Most users have three principal criteria for specifying elastomers — polymer type, price and hardness. However, selecting an elastomer seal without understanding the terminology of the manufacturer can lead to the wrong type of material for a particular application. To prevent this from occurring, first define the application in terms of the material's compatibility with the media being sealed, and identify the required grade and compressibility.

Related equipment and services: Elastomer seals, O-rings, elastomer materials (polymers, etc.), rubber gaskets, elastomer molding equipment

FOCUS

Engineering Software

Summary: This month's focus will present the latest in software versions and updates.

Related equipment and services: All types of software, including CFD, FEA, CAS, modeling, simulation, graphical display, P&IDs and piping, and so on

Send editorial submissions to senior editor, Gerald Ondrey (gondrey@che.com)

NEWSFRONT

Rubber

Summary: Demand for more tires as well as new ecolabeling schemes in Europe and Japan are placing new demands on companies that produce synthetic rubber. As a result, production capacities are increasing and new process technologies are being developed. This Newsfront will present the latest in rubber production, as well as ways to deal with (recycle) the growing amount of used tires piling up.

Related equipment and services: Rubber production technology; chemical additives for tires; recycling technology (mills, shredders, and so on)

Send editorial submissions to senior editor, Gerald Ondrey (gondrey@che.com)

Water Treatment

Summary: This month's Newsfront will look at new developments in chemicals for water treatment and the equipment used to dose them.

Related equipment and services: Water treatment chemicals, ion-exchange resins, dosing pumps, metering pumps, diaphragm pumps, weighing systems

Send editorial submissions to contributing editor, Joy LePree (jlepree@che.com)

FRACTIONATION COLUMN

Summary: This monthly column in *CE* is written by the technical director at Fractionation Research Inc., a consortium of end-users, engineering companies and distillation equipment providers that pool budgets on distillation research.

Related equipment and services: Distillation towers, trays and packings, tower scanning equipment and services

ENGINEERING PRACTICE

Achieving Cleaner Solutions: Filtration Employing "Step-Down" Particle Retention

Summary: In each filtration application, there are always questions, such as those involving the recovery of a solid, what to do with the liquid or what to do with a solid when it ends up as part of the filter media, as is the case with precoat filter aids, cartridges or surface media. This article introduces the possibility of using the experience gained by the employment of re-circulatory filtration and applying it to an **in-line** application. In an effort to reduce the amount of filter media, solution loss, downtime and waste, another approach should be considered — employ 'step-down' filtration.

Related equipment and services: Solid-liquid separation technology, filter media, solid sieves, filter chambers

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Silencing Steam Hammer in a Reboiler Condensate

Summary: This paper describes one of the problem areas of steam condensate pots, namely the entry point of the condensate line. Lessons learned are that the correct, inexpensive hydraulic design of a condensate pot is central to stable, trouble-free reboiler operation, and that correctly locating the condensate inlet to the drum is central to trouble-free operation.

Related equipment and services: Distillation columns and equipment including internal components, such as trays and packing; pumps; nozzles; piping; engineering services and software that help design fractionation columns; temperature measurement and control; level measurement and control

Calculate Liquid Volumes in Tanks With Dished Heads

Summary: Vertically and horizontally oriented tanks with dished heads are widely used throughout the CPI, in both storage and reactor applications. In some cases, liquid volume calibrations of these vessels exist, but for many liquids, the liquid volumes must be calculated. This article presents detailed equations to calculate the liquid volume in such tanks, as a function of liquid depth, and offers spreadsheets to help engineers perform the calculations.

Related equipment and services: Storage tanks, piping and calculation-based software and spreadsheet systems

How to Optimize Ejector Sizing for Vapor-Recovery Units in Steam-Assisted, Gravity-Drainage Service

Summary: Steam-assisted, gravity-drainage (SAGD) operations rely on large tanks venting flammable and sometimes toxic gases. Safety and environmental concerns require engineers to design systems to collect these gases, using a vapor-recovery unit (VRU) to collect the gases for use elsewhere (for instance, as a combustion gas in a steam generator). When choosing a VRU setup for a SAGD facility, the two most common options employ compressors or ejectors. This article provides practical guidance for optimizing ejector sizing for such service.

Related equipment and services: Tanks, vapor-recovery systems, ejectors, compressors, control systems, pressure sensors, flares

FACTS AT YOUR FINGERTIPS

High-Purity Processing: Sterilization

Summary: This one-page reference will outline various approaches to sterilization.

Related equipment and services: Sterilization equipment, ethylene oxide treatment equipment, autoclaves, irradiation devices, industrial ovens for dry-heat sterilization

SHOW PREVIEWS

ChemInnovations Show Preview II

Summary: This preview will provide brief descriptions of products and services that will be featured on the exhibit floor at the event.

Related equipment and services: Any products and services provided by ChemInnovations exhibitors

Weftec Show Preview

Summary: This preview will outline details of Weftec 2011, and will describe some of the products and services that will be exhibited at the show.

Related equipment and services: Any products or services offered by Weftec exhibitors

Exhibitors at these events can send editorial submissions to associate editor, Scott Jenkins (sjenkins@che.com)

Powtech Show Preview

Summary: This preview will present the latest equipment and technology on display Powtech 2011: The International Trade Fair for Mechanical Processing Technologies and Instrumentation (11–13 October 2011; Nuremberg, Germany).

Related equipment and services: All types of equipment for processing, handling and measuring solids (Mills, grinders, conveyors and feeders, particle analyzers, sieves, classifiers, dust handling, and so on).

Send editorial submissions to senior editor, Gerald Ondrey (gondrey@che.com)

LOOK FOR THESE ARTICLES COMING IN THE OCTOBER ISSUE:

Feature Reports

Maintaining Pumps

Filtration

Equipment Focus

Weighing

Equipment News Roundup

Gas Detection

Facts at your Fingertips

Steam Handling

Show Preview

Chem Show