

PURITY

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The solution for the polymer and petrochemical industries



OCS Optical Control Systems GmbH

is the world's leading manufacturer of high precision optical, physical, rheological and chemical testing systems for quality control in the polymer and petrochemical industries.

Founded in 1990, with the focus on the optical detection, localisation and analysis of even the smallest defects in polymer products, our product range is continuously expanding. Extrusion process, rheological behaviour, molecular structure and chemical composition of the appropriate material are reveal quality indicators. OCS includes all these factors in its quality control system range to assure the highest product quality and an optimisation of the production process to meet the highest customer requirements.

On the grounds of these facts, today OCS has the top ranking position as quality indicator in three of the plastic industry's main branches, both in on-line and in off-line applicable quality control systems:

Raw Material Inspection

Pellet and powder analysers, film extruders, gel and additive using extruded film

Web Inspection

Complete film inspection in production speed

Turn-key laboratory solutions

Consultancy, planning, equipment supply and installation, training and after sale service

A highly expert and innovative team of development and production engineers allows OCS to supply state of the art technology and know-how world-wide and is always in the lead with systematic research and development work.

With our trust and belief in "inspired synergy" we cultivate an inspiring connection to our customers who feel confident with our ability and willingness to solve their problems.

Leading manufacturers in the petrochemical and polymer industries benefit from these features. World-wide, our system solutions are successfully in service. Most raw material producers and converting companies are highly satisfied OCS customers.



»Your partner to be with«
OCS



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Raw Material Inspection

Plastic has become indispensable these days. There is no industry sector that can disclaim working with polymer or petrochemical material. In addition, conventional manufacturing materials substances are slowly being replaced by plastic, because of its low cost.

The polymer and petrochemical industries are the leading branches, and the level of their requirements has risen equally.

The quality of raw material has to improve to remain competitive; avoiding defective goods, miss production and financial penalties. Therefore, not only the physical properties of pellets and powder are important, furthermore the extrusion process has to be checked as well as the rheological behaviour or rather the molecular structure and the chemical composition of the appropriate material are revealing quality indicators.

OCS Raw Material Inspection Systems

OCS Raw Material Inspection Systems are designed as adequate reaction to the new requirements. As highly developed optical, rheological, physical and chemical control systems, they guarantee best properties for the fields of polymerisation, processing and application.

When used as on-line systems to optimise the process control, they shorten the response- and product change time, and provide quality assurance (QA) and quality control (QC) when used as off-line lab systems.

QUALITY CONTROL



The solution for the polymer & petrochemical industries



Contamination, discolouration, size and shape distribution

Pellet Analysis:

PS25C, PS200C, PS400C, PA66, PSSD

Powder Analysis:

PT2C

Flat Blank Analysis:

MPA

Film Analysis:

FSA100, FTA100, Tape Test & Calender equipment, NipTest

Rheological, chemical and physical composition

FT-IR Spectroscopy:

APLAIRS®

Rheology:

OP5

Full Notch Creep Test:

FNCT

Thickness Measurement:

FTM

Gloss Measurement:

OGM

Haze Measurement:

OHM



Complete Extrusion Lines (laboratory use or narrow films)

Extruder:

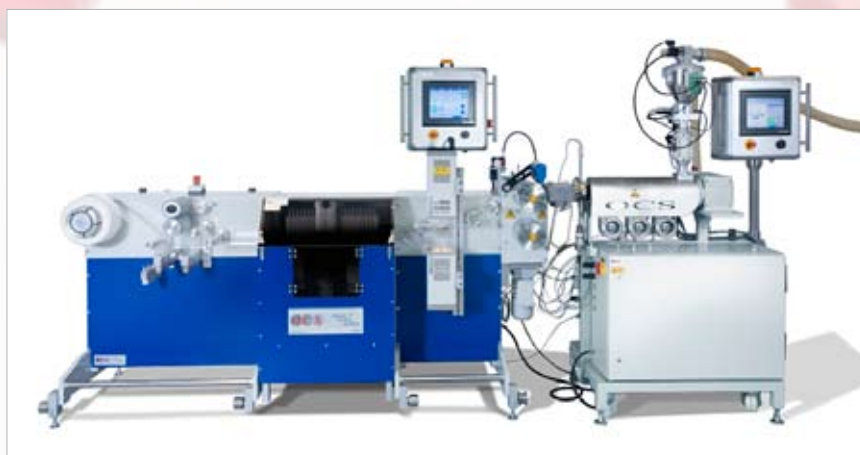
ME

Chill Roll & Winder Unit:

CR9/WU9

Pellet Transport System:

PTS



Web Inspection

During the establishment of various raw material inspection systems, OCS was confronted with the increasing interest of polymer processing companies, to ensure the same excellent product quality for their customers as well as their sub-contractors.

At first, a challenge was posed to develop a detection system for contamination, degradation and other impurities in transparent, opaque and coloured films during the production process.

OCS Web Inspection Systems

OCS web inspection systems are as well as the raw material inspection systems, designed as adequate reaction to the constantly rising quality requirements in the extrusion and converting industries. With the aid of precision cameras, in conjunction with high performance heavy duty industrial equipment and devices, even the smallest defects in polymer products can be detected, located and analysed in detail during the production process as well as during the film processing and finishing process. The used lighting technologies transmission or reflection mode consist of high frequent fluorescence lamps with a special designed focusing rod or high power blue/red/white LED`s with chip on board technology (COB) and passive cooling management.

As a modular system with an optional applicable number of cameras, the FSP600 achieves a 100 % surface control for running speeds up to 1000m/min and resolutions from 25µm and is perfectly adjustable to customers` requirements.

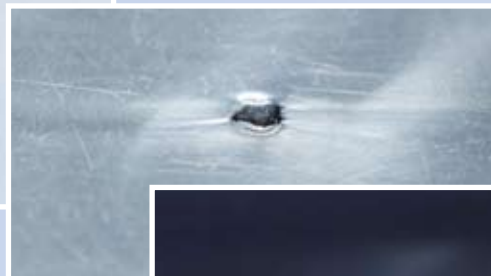
The Mobile FSP600, a transportable inspection frame, enables the producer to inspect various lines with one FSP600 system. The portable frame provides a great flexibility and is a state of the art troubleshooting unit, e.g. in Biax lines.

The solution for the film & converting industries

FSP600 & Mobile FSP600

FSP600 is used for 100% surface control of films during production process for running speeds up to 1000m/min and resolution from 25µm. As modular system with an optional applicable number of cameras it can be adopted to a production width up to 10000 mm.

Mobile FSP600 is used as flexible state of the art troubleshooting frame. Clients are able to inspect various lines up to 400mm and 25 µm resolution.



Detectable defects

Gels, black specks, fish eyes, holes, wrinkles, scratches, coating voids, water drops, oil stains, insects, contaminations, bubbles, die lines, craters

Fields of Application

Cast- & Blow film and sheet lines (PP, PET, PE, ABS, PC, PMMA, etc.), Coating lines, Calendering lines, Bi-orientation stretch film lines, Aluminium: extrusion coating and laquering lines, Technical films, Surface protection films, Medical /pharmacy films, Optical films, Hygiene /diaper non-woven films and laminates, Automotive films

Turn-key Lab Solutions

When planning a turn-key laboratory, it is always best to have one company in charge of the coordination. This increases efficiency and helps in attaining the desired outcome. OCS is aware that dealing with one company smoothes the progress of the project as a whole, and helps keep the client updated regularly. Under OCS management, all vendors must meet the same high standards and the client will have an experienced company in the plastic industry directing the work offers.

Delivering a turn-key laboratory means assisting the client from the first steps on and gives support for the entire steps. Accordingly, OCS fulfills all of these essential parts of this way as one guarantor: Offering only one partner, who is sole point of contact to handle all aspects related with planning of utilities, selection of laboratory elements, construction, planning and negotiations with subcontractors, organisation of the full analyser package, selection of the best possible analytical instrument, in balance with performance and price, all in tune with the required production process.

Accordingly OCS Turn-key laboratory solutions are guided by OCS professionals with many years of experience fitting out laboratories worldwide and comprehend:

- Consultancy
- Planning
- Realisation
- Equipment
- Training
- Optimal after sale service

QUALITY CONTROL



The solution for laboratory operators

Technologies

LyondellBasell, ExxonMobil, Mitsui Chemicals, Borealis, Dow, Innovene, Novolen Technology



Equipment:

Spectroscopy/Chromatography; on- and off-line Polymer Analysers; Analytical Instruments; Material Testing Instruments and Polymer Testing Equipment

Overall responsibility from one source





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OCS On-site Conferences

Both events have been established during the last years to keep true to our motto "Inspired synergy", as well as to keep in touch with our customers and intensify our relation with the end-users.

Web Inspection Days

The OCS Web Inspection Days is held once every two years to discuss new developments and critical issues, as well as the newest developments with film producers.

Global Gel Meeting

The OCS Global Gel Meeting primarily brings together raw material producers, laboratory and plant operators in addition to OCS international representatives to discuss the latest developments and critical issues.

Every meeting is characterised through a copious interchange of ideas, inspiring discussion space and a market place atmosphere for establishing new business relations among the participants. OCS is proud to welcome speakers, customers and interested parties from all over the world.



OCS Training Centre

The OCS headquarter exhibits a factory-owned technical and training centre that offers courses of introduction for the professional use of the raw material inspection systems as well as the FSP600 web inspection system at regular interval dates or on request.

The future system administrators acquire substantial expertise during their stay at OCS. In a theoretical part of the seminar they are instructed in the software functions of the machines. When working with them under real conditions and with professional support, they get valuable practical experience.

OCS Material Sample Testing

Furthermore, the technicum offers the possibility to test whole film rolls under real winder conditions as well as the testing of every kind of pellet and powder. Future customers could send the bulked material to OCS for a detailed detection, which are then sent back with a detailed feasibility study of all kinds of found defects. The future customer could also personally supervise the quality control of the film, pellet or powder sample in a live demonstration.





Overall quality control at first hand

Around the world the three letters "OCS" are classified as a symbol for perfect quality control and customer satisfaction in the polymer & petrochemical as well as in the film & converting industries.

Many well-known raw material manufacturers and extrusion and film processing companies trust in its precocity, its ability to optimise the production process, its reliability and efficiency as well as the economical impact.

By using OCS equipment, the polymer process capability is highly increased; the quality growth, constancy and operation cost of the plant are significantly improved.

Constancy and smooth operation

- All needed major analytical values and therewith all plant operation values are available every time – direct overview of plant situation
- Plant parameters are in the designated levels
- Exceeding of analytical values are recognised soon and can be managed
- Overview on all parameters allow smooth operation at all times
- Direct parameter corrections keep the plant in stabile conditions

Direct results, fast reaction and direct handling

- Serious time saving in getting immediate quality measurement results and malfunctions by monitoring nearly all results in real time
- Cases of plant malfunctions are minimised because deviations from regular are observed directly and can be limited
- Real time reaction on parameter changing
- Short time switch-over during transitions

Laboratory independence

- Reduced man power in lab
- Plant orientated operation
- Wide possibilities of error prevention

Optimised product mix, transition and scrap minimising

- Well known values allow flexible product changes
- Exact results are used for optimised product mix
- Campaigns of defined products easily can be prolonged or shortened
- Optimise plant flexibility by remix
- Conspicuous reduction of transition time
- Enabled to operate advanced transitions
- Direct insertion of influence

Perfect additive control

- Continuous control of stabiliser, slip agent, anti-block, antioxidant and other additives
- Additive limit settings or alarms
- Optimised additive consumption

General plant overview

- Continuous data collection
- Statistics
- Process capability
- Increase of process CpK-values

On time readjusting

- Instantaneous intervention in case of parameter deviations
- Direct switch to good or fail production
- Preventing huge amounts of scrap

Error prevention

- Avoiding human errors
- Avoiding miss-sampling
- Avoiding analytical data transfer errors



YANSAB

INDIAN OIL

HUNTSMAN/SABIC

GE PLASTICS

NEXANS

LYONDELLBASELL

OMAN POLYPROPYLENE

BOROUGE/BOREALIS

**AMIR KABIR PETROCHEMICAL
COMPANY AKPC**

BRASKEM

SASOL

CLARIANT

BASF

INDIAN OIL CORPORATION IOCL

TETRA PAK

SAUDI KAYAN

SOLVAY

JAPAN POLYETHYLENE

IBN ZAHR

OCS worldwide

TASNEE

OCS is committed to be the global partner for well known raw material manufacturer, extrusion and converting companies and turn-key laboratory owners:

With pleasure we will introduce you to our representatives in North and South America, Europe, Africa, Middle East, Asia and Australia.



WINDMÖLLER & HÖLSCHER

ALCAN PACKAGING

ELOCOAT

MITSUBISHI

BRÜCKNER

KLÖCKNER PENTAPLAST

NORDENIA

EVONIK RÖHM

BAYER

VALERON

AMCOR FLEXIBLES

AEP

LOHMANN TAPES

LYONDELLBASELL

SILVALAC

DOW

QAPCO

ETIMEX

NOVA

SIGHT-PACK HAGNER

TOTAL

DOW

RENOLIT

RKW

CONSTANTIA

DUPONT

SABIC

BAYER

WIPAK

FATRA

MITSUI

INEOS

BISCHOF & KLEIN

TRIOPLANEX

RÖHM & HAAS

PETROCHINA

ORBITA

SÜDPACK

KOROZO

REPSOL

DSM

LENZING PLASTICS

KWH PLAST

CABOT

NOVA

TRIOPLAST

AVERY DENNISON

MITSUBISHI

ARKEMA

EXXONMOBIL

VITEMBAL

TREOFAN

INTEPLAST

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