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1 General economy with reference to the plastics industry

The coronavirus crisis is throwing the markets for standard plastics, and those for technical plastics, into disarray. For example, the demand for packaging plastics for foods, medicine products, pharmaceuticals and leisure in particular is rising. However, drastic collapses in demand have been seen in car manufacture and the construction sector. On 13 May 2020, crude oil prices were quoted at only USD 28.50 - and this means that the precursor product prices are falling as well as the prices of the virgin grade plastic.

In KI – Plastics Information Europe, see www.kiweb.de, the price index for standard plastics, Plastixx ST, has a value of only 1,824 points in April 2020. And this quote is thus equal to the lowest rate of the last 10 years, from early 2015 when it was around 1,820 points. As far as technical plastics are concerned, the KI price index TT for technical plastics, currently at 1,327 points, is actually lower than the lowest levels of the last 5 years. For example, in February 2015 the TT price index was quoted at around 1,340 points and in October 2016 at 1,334 points.

2 The primary plastics market - standard plastics

Marked price falls for standard plastics: in April 2020 the standard plastics were quoted in EUWID, see www.euwid-recycling.de, at only 916 €/t and thus an average 111 €/t lower than in the previous month (1,027 €/t), see Table 1. In a year-on-year comparison, it can be seen that the average quotes from April 2020 (916 €/t) were 360 €/t lower than those of the previous year (1,276 €/t). All standard plastic prices fell in April: LDPE -100 €/t, LLDPE -95 €/t, HDPE -100 €/t, PP -100 €/t, PS -173 €/t and PVC -90 €/t. Or, to put it another way, only the commodities of PS and PP are quoted at an average of just over 1,000 €/t.

The demand for packaging PET is high because of the coronavirus crisis. Private drinks consumption should be mentioned first of all. Moreover, disinfectants and cleaning agents are also predominantly filled in PET containers. Furthermore, PET films are being increasingly used for packaging. And finally, PET fleece materials are used in face masks. However, the demand for PET cannot compensate for the price falls for paraxylenes. Packaging PET was therefore quoted at an average price of 980 €/t in April 2020, thus 45 €/t lower than in the previous month. Bottle PET is being traded for prices around 700 €/t and sometimes even lower. Currently, packaging PET is being quoted at the lowest prices for 10 years.

Table 1:	Standard plastics prices	according to EUWID	over the past five month:	s, listed in €/t.

Prices in €/t	April 2020	March 2020	Feb. 2020	Jan. 2020	Dec. 19
LDPE film grade	830- 930	930- 1010	970- 1050	980- 1050	980- 1050
LLDPE film grade	850- 950	950- 1040	990- 1080	990- 1080	990- 1080
HDPE injection moulding	820- 900	920- 1000	990- 1050	1090- 1150	1090- 1150
HDPE blow moulding	850- 930	950- 1030	1010- 1070	1110- 1170	1110- 1170
PS crystal clear	950- 1170	1120- 1170	1220- 1270	1180- 1240	1180- 1240
PS high impact	1030- 1100	1220- 1270	1320- 1370	1280- 1340	1280- 1340
PP homopolymer	990- 1040	1090- 1140	1130- 1180	1180- 1230	1180- 1230
PP copolymer	1040- 1090	1140- 1190	1180- 1230	1230- 1280	1230- 1280
PVC tube grade	710- 750	800- 840	800- 840	800- 840	800- 840
PVC film/cables	750- 790	840- 880	840- 880	840- 880	840- 880
Average Price	916 ± 118	1027 ± 137	1070 ± 158	1097 ± 162	1097 ± 162

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2.2 The primary plastics market - technical plastics

There has also been a marked price fall for technical plastics: from February 2020 (2,327 €/t) to April 2020 (2,173 €/t), technical plastics fell by 154 €/t, see Table 2. The average price in April 2020 (2,173 €/t) was as much as 563 €/t lower than that of April in the previous year (2,736 €/t). The price reductions are due to the low demand, the low prices for the precursor products and, finally, the low price of crude oil.

Supply of technical plastics is good; however, the lack of sales in the car industry and in electrical and electronics is being felt. Price falls have bee recorded for ABS at 200 €/t, PC at 200 €/t, POM at 50 €/t, PA 6 at 83 €/t, and PA 66 at 75 €/t.

Table 2:	EUWID quotes for technical prices, which are published every two months, over the last
	eight months; prices in €/t.

Prices in €/t	April 2020	February 2020	December 2019	October 2019
PMMA crystal clear	2900 - 3100	2900 - 3100	3000 - 3200	3050 - 3250
ABS natural	1350 – 1400	1550 – 1600	1510 – 1560	1610 – 1660
ABS w/b	1450 – 1500	1650 – 1700	1610 – 1660	1710 – 1760
ABS coloured	2050 - 2200	2250 – 2400	2210 – 2360	2310 - 2460
PC crystal clear	2150 - 2250	2300 – 2500	2450 – 2700	2550 - 2850
PC GF-reinforced	2350 - 2450	2500 – 2700	2650 - 2900	2750 - 3050
POM natural	1800 – 1900	1850 – 1950	1850 – 1950	1900 – 2000
PA 6 natural/black	1800 – 1900	1850 – 2000	1900 – 2050	2000 – 2200
PA 6 GF-reinforced	1850 – 1900	1950 – 2000	2000 - 2050	2100 – 2150
PA 66 natural	3000 – 3100	3150 - 3250	3350 - 3500	3550 - 3700
PA 66 GF-reinforced	3000 - 3050	3000 - 3050	3200 - 3300	3400 – 3500
Average Price	2173	2327	2407	2523

3 Secondary plastics markets in the plasticker price index

The plasticker internet platform, see http://plasticker.de, publishes quotes on an hourly basis. The present market report indicates the final monthly prices. It is only possible to represent the preliminary prices for May 2020; they will not become definitive until early June. The two quotes stated for May 2020 below indicate only an interim situation, see the left-hand column in Table 3 and Table 4.

3.1 plasticker: Standard plastics

Surprising April quotes for standard plastics in plasticker: Whereas all other indices show clearly falling prices, the offers and searches in plasticker actually amount to rising prices. The demand for plastic is also surprising because the April price index recorded satisfactory demand for plastic.

The average price for April 2020 (496 €/t) was 18 €/t higher than that of the previous month (473 €/t). 3. The average price for April 2020 (491 €/t) was 54 €/t below that of the previous year (544 €/t). The following price changes were more than ± 40 €/t: LDPE regranulates +50 €/t, PS regranulates +50 €/t, PVC_P regrind +50 €/t, PVC_U regrind +90 €/t and PET regrind +70 €/t. A 5-year low was reached for the prices for HDPE regrind at 520 €/t, HDPE regranulates at 720 €/t, LDPE regranulates at 590 €/t.

And a preview of the May quotes still records surprisingly high prices for standard plastics. At 487 €/t an average price is calculated here that is similar to that of the previous month (491 €/t), see Table 3. The May 2020 price index, 13.05.2020, shows subdued demand for plastic.

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May⁶ 20 April 20 March 20 Feb. 20 Jan. 20 April 19 HDPE regrind¹ 520 520 520 550 570 570 HDPE regranu-720 670 720 730 750 870 lates⁵ 160* 160* 210* LDPE bale goods² 150 220 220* LDPE regrind¹ 480* 530 530 470 480 550 LDPE regranu-590 640 600 600 720 580 lates⁵ PP bale goods³ 180* 190 240* 180* 160* 190* PP regrind¹ 540 510 590 520 530 560 PP regranulates⁵ 810 830 870 860 870 790 PS regrind⁴ 630* 610 610 570 630* 620 1080 PS regranulates⁵ 770 800 750 750 840 PVC_P regrind¹ 380* 370* 260 210* 200* 290* PVC_U regrind¹ 510* 440* 360* 480 510* 480* PET bale goods 210* 220 230* 170* 130* 170* PET regrind mixed 310 390 380 330 370 360 colours 475 **Average Price** (487)491 473 490 544

Table 3: Standard plastics price according to plasticker; listed in €/t.

3.2 plasticker: Technical plastics

There were also surprising April quotes for techical plastics in plasticker: Whereas all other indices show clearly falling prices, the offers and searches in plasticker actually amount to rising prices. The demand for plastic is also surprising because the April price index recorded satisfactory demand for plastic.

In April 2020 the average price for technical plastics in plasticker is 1,265 €/t and thus 57 €/t higher in comparison to the previous month (1,208 €/t), see Table 4. A comparison of the average prices from April 2020 (1,265 €/t) with those of the previous year (1,265 €/t) shows no difference. These plastics show price changes of more than \pm 70 €/t: ABS regranulates - 200 €/t, PC regranulates +330 €/t, PBT regranulates +240 €/t and POM regranulates +300 €/t.

Only the preview of the May quotes indicates falling prices for technical plastics. At 1,187 €/t, the preview shows an average price that is 78 €/t lower than in the previous month (1,265 €/t). The May price index shows plastic demand that is enitrely satisfactory for the crisis.

	May ⁶ 20	April 20	March 20	Feb. 20	Jan. 20	April 19
ABS regrind	610	630	620	630	620	680
ABS regranu- lates ⁵	910	1040	1240	1380	1480	1230
PC regrind	760	820	880	880	890	790
PC regranulates ⁵	1900*	1940	1610	1650	1530	1700
PBT regrind	450	450	460	460	480	460
PBT regranulates	1660	1880	1640	1540	1570	1700
PA 6 regrind	860	850	850	860	840	840
PA 6 regranu- lates ⁵	1810	1850	1830	1740	1750	1830

Table 4: Technical plastics price according to plasticker; listed in €/t.

^{*:} Supply figure too low to attain statistical significance; ¹: equivalent to the grade "post-industrial mixed colours"; ²: equivalent to K49; ³: equivalent to K59; ⁴: equivalent to "standard, mixed colours"; ⁵: equivalent to the grade "regranulates, black"; ⁵: preview (may be amended by additional quotes)

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PA 6.6 regrind	910	920	890	890	880	950
PA 6.6 regranu- lates ⁵	2170	2040	2070	2120	2150	2470
POM regrind	610	640	580	680	680	630
POM regranu- lates ⁵	1590	2120	1820	1590	1440	1900
Average Price	(1187)	1265	1208	1202	1193	1265

^{5:} equivalent to the grade "regranulates, black"; 6:preview (may be amended by additional quotes).

4 Evaluation of the secondary plastic markets

This time, the quotes from plasticker and EUWID diverge from each other greatly. The coronavirus crisis is not yet reflected in plasticker, whereas EUWID has come to a realistic assessment of the current market conditions. The EUWID assessment of market conditions is confirmed by reports and indices from KI – Plastic Information, see www.kiweb.de.

Standard plastics: In plasticker the standard plastics are quoted 18 €/t higher than in the previous month, whereas EUWID reports a price fall of 111 €/t for virgin grade. The price fall can also be seen in the EUWID price index for waste plastics, both in post-industrial and post-user waste. As far as regrinds are concerned, the average price falls are between 30 €/t and 75 €/t. And the demand for plastics also varies greatly between the two price indices: whereas plasticker reports that demand is still satisfactory during the crisis, EUWID has recorded a marked fall in demand. And a preview of the May quotes still records surprisingly high prices for standard plastics in plasticker.

Technical plastics: EUWID reports that demand for technical plastics has collapsed completely, see EUWID RE 17, p. 22. Moreover, EUWID reports falling plastic prices for virgin grades of around 154 €/t, whereas the prices are holding their own in plasticker with a rise of 57 €/t. In plasticker the April price index portrays a picture that is the exact opposite of the one in EUWID. Only the preview of the May quotes corrects the April picture in plasticker.

4.1 Plastic wastes

The price of plastic wastes is falling - the value of plastic wastes has fallen considerably at the collection point or at the disposal companies. Only clean plastics that have been stored separately can be valued positively. This means that plastics from other material flows must be stored separately and in the dry - pre-sorted according to plastic type. Mixed plastic wastes are usually valued negatively. Or, to put it in other words: the disposal companies are struggling with rapidly falling prices for plastic waste.

In the EUWID price index, PE post user film wastes are quoted lower – with the exception of commercial mixed film. The average price falls are in the range of $3 \in /t$ to $50 \in /t$. Good film waste is currently in demand. There are occasional shortages of films, with the result that commercial mixed film was actually quoted slightly higher in April; in particular, commercial mixed film (90:10) by $5 \in /t$ and commercial mixed film (80:20) by $8 \in /t$.

4.2 Plastic recycling:

The current situation is extremely critical for the European plastic recycling industry; important markets for plastic recyclers are eroding. Even now the fact that industry is using less recyclates than before can be felt. Sales in car manufacture and construction have largely come to a halt.

Due to the coronavirus pandemic, industrial demand for plastic recyclates is in freefall the world over. This can be clearly seen, not just in the price of oil, but prices for virgin grade

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plastic have also hit historic lows. However, as a result of this, the price advantage of recycled goods in comparison to primary products disappears or even goes into reverse.

The trade in recyclates in the European Single Market is greatly limited due to the restrictions when crossing borders. Export logistics can be maintained only with considerable obstacles or delays. Recyclers are registering cancellations from countries in which they have built up stable sales markets. The combination of the price collapse for virgin grades, along with a fall in demand and logistical difficulties are major problems for the recycling companies.

As far as post-industrial wastes are concerned, the average price falls are between 30 €/t and 75 €/t. Thus, the average price fall for PE regrinds is 58 €/t, for PP 48 €/t, for PS 41 €/t and PVC 59 €/t. Regranulates are under price pressure. At the moment, there is hardly any demand for HDPE regranulates. And there is thus also reduced demand for PP regranulates. And there is hardly any demand for PS commodities, either. And PVC, which is mainly used in the construction industry, is suffering in the weak economy.

There are adequate quantities of high-quality plastic waste available on the markets. In April, the recyclers are trying to make the purchase prices of the waste to be processed in such a way that treatment into regrinds or regranulates is more economical than in the previous month. Hope for improved domestic sales of recylates are based on economic recovery.

4.3 PET Recycling

The PET market has done a U-turn. Whereas the demand for regrinds and regranulates was still high in March, in April the cheap virgin grades are pushing the prices of recyclates down. Moreover, the virgin grades, which are now available in sufficient quantities, are ousting recyclates.

Although the volumes of PTE beverage bottles have reduced in comparison to previous months, they are still considered to be adequate. In order to be able to continue manufacturing, recyclers have no choice other than to reduce the purchase price as low as possible. The April quotes for used PET returnable bottles, which are PET clear, PET mixed and PET coloured, each fell by 25 €/t.

5 Explanation on the price quotes

A detailed discussion with information of price indices for virgin grades and waste plastics as well as precursor products can be found in EUWID Recycling and Disposal see www.euwid.de, or in EUWID Plastics www.euwid-kunststoff.de. EUWID: No guarantee for any of the prices.; prices ex station. As a rule, the prices quoted refer to quantities in excess of 20 tons.

The quotes for secondary prices, which are updated on an hourly basis, can be calculated using the price lists that are derived from the quotations published in the raw material exchange plasticker, see www.plasticker.de. The prices listed in this index are quoted without reservation - as the majority of the quotes submitted are not necessarily equivalent to the sales prices. Plasticker offers the quality grades regrind and regranulates both as virgin materials and as secondary goods. The term 'bale goods' refers to waste plastics only. Furthermore, plasticker does not distinguish between the following grades: transparent, mixed colours or colour-separated. Therefore, the information provided by plasticker may indicate different market behaviour than the prices quoted by EUWID