【Technical Data】		YAMAGUCHI MICA CO., LTD.						
Title	Investigation o	f silica conten [.]	t in ۱	/MC Pro	oducts 2[/	Aichi SR Po	wder X-ray Diffr	action]
Category	Safety	Written by		T.Mur	ahashi	Date	Jul. 15th	ו, 2025
<abstract> Using pov results con We will con method fo</abstract>	wder X-ray diffract responding to the ntinue to confirm r measuring the c	ion measurem amount of cry the accuracy a rystalline silica	ents /stall ind re con	at the A ine silica eproduc tent in r	ichi SR be a containe cibility of t nica.	amline BL5S d in mica. he measure	52, we obtained n ements in order t	neasurement :o establish a
<implement In our pr method, ar In this stu Aichi SR. • The m The in used • As a h sheet amou</implement 	ntations> evious 2019 repond it was confirme udy, powder X-ra neasurements we ncident X-ray ene for analysis were blank (0% crystalli torm) was pulver unt of crystalline s	ort, the crystal ed that the crys y diffraction n re carried out a rgy was set at converted to a ne silica), a mie ized. A standa ilica powder.	line stallin neasu at th 12.4 ingle ca sh rd sa	silica co ne silica urement e Aichi s keV, th s corres neet (a p ample w	SR beamline measure ponding t roduct ma vas prepar	the mica w f AB-25S w ynchrotron ne BL5S2 us ement time o Cu K $_{\alpha}$ ra ade by proc ed by mixir	vas measured us as less than 0.5% radiation were p sing powder X-ra was 30 minutes, diation energy. essing pure mica ng this blank with	ing the XRD berformed at y diffraction. and all data crystals into an arbitrary
950 850 750 650 (5550 (5550 450 150 50 -50 49 49	mica mica mica 2 49.4 49.6 49.8 28(degree)	silica	— sili — sili — sili — sili — AB	ca1.0% ca0.5% ca0.2% ca0.1% ca0% -25S	0.0 lintegrated Intensity Ratio of mica/silica 0.0 r.0 nca/silica 0 0 0 nca/silica 0 0 0 0 nca/silica	- AB-255, 0.023	789685 = 0.5305x + 0.0547 R ² = 0.9965 4 0.6 0.8 lica Concentration	1 1.2
Fig.1 Results of powder X-ray diffraction measurements.					Fig.2 Correlation between the integrated intensity ratio of mica/silica and silica concentration.			

From the XRD measurements, a silica peak dependent on the amount of silica added was confirmed at around 50.1 (Fig.1).

Next, the ratios of integrated intensities between mica and crystalline silica were calculated. As this result, a very high correlation was confirmed between the crystalline silica concentration in mica and the integrated intensity ratio (Fig.2). By applying the values of our mica product AB-25S to Fig. 2, the silica content was estimated to be a very low value of 0.02%.

<Conclusions>

Using powder X-ray diffraction measurements at the Aichi SR beamline BL5S2, the amount of crystalline silica contained in mica can be estimated. Based on this method, the silica content in our mica product was found to be less than 0.1%.

We will continue to confirm the accuracy and reproducibility of the measurements in order to establish a method for measuring the crystalline silica content in mica.